STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 173981

TO:	From:
Jegatheesan Seharaseyon Location: rem/4C61/4C70 Art Unit: 1647 Thursday, December 15, 2005 Case Serial Number: 10698402	Alex Waclawiw Location: Biotech-Chem Library Rem 1A71 Phone: 272-2534 Alexandra.waclawiw@uspto.gov

Search Notes

STIC-Biotech/ChemLib 173981 mg

From: Seharaseyon, Jegatheesan
Sent: Monday, December 12, 2005 1:47 PM
To: STIC-Biotech/ChemLib
Subject: Re:10/698402

Hi,
Please search SEQ ID NO: 2 of 10/698402. Thanks.

Seyon
J.Seharaseyon
Art Unit 1647
Remsen 4C61
Mailbox 4C70
Phone: (571)-272-0892
Fax: (571)-273-0892

****
Searcher:_____
Searcher Phone:_____
Date Searcher Picked up:_____
Date completed:_____
Searcher Prep Time:_____
Online Time:_____

Point of Contact:
Alexandra Waclawiw
Technical Info. Specialist
CM1 6A02 Tel 30[illegible]

****
Type of Search
NA#:_____ AA#:_____
S/L:_____ Oligomer:_____
Encode/Transl:_____
Structure #:_____Text:____
Inventor:_____ Litigation:___

****
Vendors and cost where applicable
STN:_____
DIALOG:_____
QUESTEL/ORBIT:_____
LEXIS/NEXIS:_____
SEQUENCE SYSTEM:_____
WWW/Internet:_____
Other (Specify):_____

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: December 15, 2005, 12:49:43 ; Search time 47 Seconds
(without alignments)
332.462 Million cell updates/sec

Title: US-10-698-402-2
Perfect score: 978
Sequence: 1 MALPFVLLMALVVLNCKSIC.....EIMRSFSLSANLQERLRRKE 189

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 572060 seqs, 82675679 residues

Total number of hits satisfying chosen parameters: 572060

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	978	100.0	189	2	US-09-206-935-11	Sequence 11, Appl
2	978	100.0	189	2	US-09-949-016-8554	Sequence 8554, Ap
3	971	99.3	189	1	US-08-026-758-7	Sequence 7, Appli
4	969	99.1	189	2	US-09-206-936-11	Sequence 11, Appl
5	933	95.4	189	1	US-08-026-758-19	Sequence 19, Appl
6	868	88.8	189	2	US-09-949-016-9682	Sequence 9682, Ap
7	868	88.8	189	2	US-09-949-016-9683	Sequence 9683, Ap
8	868	88.8	189	2	US-09-949-016-9684	Sequence 9684, Ap
9	855	87.4	189	1	US-08-026-758-1	Sequence 1, Appli
10	852	87.1	189	2	US-07-145-002B-24	Sequence 24, Appl
11	852	87.1	189	2	US-06-256-204C-24	Sequence 24, Appl
12	851	87.0	189	2	US-09-206-935-19	Sequence 19, Appl
13	851	87.0	189	2	US-09-206-936-19	Sequence 19, Appl
14	851	87.0	189	2	US-07-145-002B-12	Sequence 12, Appl
15	851	87.0	189	2	US-07-145-002B-16	Sequence 16, Appl
16	851	87.0	189	2	US-07-145-002B-22	Sequence 22, Appl
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18	851	87.0	189	2	US-06-256-204C-16	Sequence 16, Appl
19	851	87.0	189	2	US-06-256-204C-22	Sequence 22, Appl
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21	846	86.5	189	2	US-07-145-002B-36	Sequence 36, Appl
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26	845	86.4	189	2	US-06-256-204C-28	Sequence 28, Appl
27	842	86.1	189	1	US-08-026-758-17	Sequence 17, Appl
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29	838	85.7	189	2	US-09-206-935-12	Sequence 12, Appl
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32	832	85.1	189	2	US-09-206-935-10	Sequence 10, Appl
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38	831	85.0	189	1	US-08-026-758-6	Sequence 6, Appli
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41	825	84.4	189	1	US-08-026-758-3	Sequence 3, Appli
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43	823	84.2	189	1	US-08-026-758-11	Sequence 11, Appl
44	821	83.9	189	1	US-08-026-758-2	Sequence 2, Appli
45	821	83.9	189	1	US-08-026-758-20	Sequence 20, Appl

ALIGNMENTS

RESULT 1
US-09-206-935-11
; Sequence 11, Application US/09206935
; Patent No. 6299877
; GENERAL INFORMATION:
; APPLICANT: Chen, Jian
; APPLICANT: Godowski, Paul
; APPLICANT: Wood, William I.
; APPLICANT: Zhang, Dong-Xiao
; TITLE OF INVENTION: NOVEL TYPE I INTERFERONS
; FILE REFERENCE: 11669.50US05
; CURRENT APPLICATION NUMBER: US/09/206,935
; CURRENT FILING DATE: 1998-12-07
; EARLIER APPLICATION NUMBER: 60/084,045
; EARLIER FILING DATE: 1998-05-04
; NUMBER OF SEQ ID NOS: 24
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 11
; LENGTH: 189
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-206-935-11

Query Match 100.0%; Score 978; DB 2; Length 189;
Best Local Similarity 100.0%; Pred. No. 1.4e-104;
Matches 189; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
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Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

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Qy        181 LQERLRRKE 189
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Db        181 LQERLRRKE 189
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RESULT 2
US-09-949-016-8554
; Sequence 8554, Application US/09949016
; Patent No. 6812339
; GENERAL INFORMATION:
; APPLICANT: VENTER, J. Craig et al.

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;  TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
;  TITLE OF INVENTION:  WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
;  FILE REFERENCE: CL001307
;  CURRENT APPLICATION NUMBER: US/09/949,016
;  CURRENT FILING DATE:  2000-04-14
;  PRIOR APPLICATION NUMBER: 60/241,755
;  PRIOR FILING DATE: 2000-10-20
;  PRIOR APPLICATION NUMBER: 60/237,768
;  PRIOR FILING DATE: 2000-10-03
;  PRIOR APPLICATION NUMBER: 60/231,498
;  PRIOR FILING DATE: 2000-09-08
;  NUMBER OF SEQ ID NOS: 207012
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 8554
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Human
US-09-949-016-8554

  Query Match             100.0%;  Score 978;  DB 2;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 1.4e-104;
  Matches  189;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
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Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
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Qy        181 LQERLRRKE 189
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Db        181 LQERLRRKE 189


RESULT 3
US-08-026-758-7
; Sequence 7, Application US/08026758
; Patent No. 5780021
;  GENERAL INFORMATION:
;    APPLICANT:  SOBEL, DOUGLAS O.
;    TITLE OF INVENTION:  A METHOD FOR TREATING AUTOIMMUNE
;    TITLE OF INVENTION:  DISEASES USING ALPHA-INTERFERON AND/OR BETA-INTERFERON
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  OBLON, SPIVAK, McCLELLAND, MAIER & NEUSTADT,
;      ADDRESSEE:  P.C.
;      STREET:  1755 S. Jefferson Davis Highway, Suite 400
;      CITY:  Arlington
;      STATE:  Virginia
;      COUNTRY:  U.S.A.
;      ZIP:  22202
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/026,758
;      FILING DATE:  19930305
;      CLASSIFICATION:  424
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Oblon, No. 5780021man F.
;      REGISTRATION NUMBER:  24,618
;      REFERENCE/DOCKET NUMBER:  1126-096-0
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703) 413-3000
;      TELEFAX:  (703) 413-2220
;      TELEX:  248855 OPAT UR
;  INFORMATION FOR SEQ ID NO:  7:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  189 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  24..189
;      OTHER INFORMATION:  /note= "IFN-alpha-5(G)"
US-08-026-758-7

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  Matches  188;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
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Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
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Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
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Qy        181 LQERLRRKE 189
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Db        181 LQERLRRKE 189


RESULT 4
US-09-206-936-11
; Sequence 11, Application US/09206936A
; Patent No. 6300475
; GENERAL INFORMATION:
;  APPLICANT: Chen, Jian
;  APPLICANT: Wood, William I.
;  TITLE OF INVENTION: No. 6300475el Inteferon
;  FILE REFERENCE: P1224R1
;  CURRENT APPLICATION NUMBER: US/09/206,936A
;  CURRENT FILING DATE: 1998-12-07
;  EARLIER APPLICATION NUMBER: US 60/067,897
;  EARLIER FILING DATE: 1998-12-08
;  NUMBER OF SEQ ID NOS: 22
; SEQ ID NO 11
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-206-936-11

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Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
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Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
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Db        121 ACMMQEVYVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
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; Sequence 19, Application US/08026758
; Patent No. 5780021
;  GENERAL INFORMATION:
;    APPLICANT:  SOBEL, DOUGLAS O.
;    TITLE OF INVENTION:  A METHOD FOR TREATING AUTOIMMUNE
;    TITLE OF INVENTION:  DISEASES USING ALPHA-INTERFERON AND/OR BETA-INTERFERON
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  OBLON, SPIVAK, McCLELLAND, MAIER & NEUSTADT,
;      ADDRESSEE:  P.C.
;      STREET:  1755 S. Jefferson Davis Highway, Suite 400
;      CITY:  Arlington
;      STATE:  Virginia
;      COUNTRY:  U.S.A.
;      ZIP:  22202
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/026,758
;      FILING DATE:  19930305
;      CLASSIFICATION:  424
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Oblon, No. 5780021man F.
;      REGISTRATION NUMBER:  24,618
;      REFERENCE/DOCKET NUMBER:  1126-096-0
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703) 413-3000
;      TELEFAX:  (703) 413-2220
;      TELEX:  248855 OPAT UR
;  INFORMATION FOR SEQ ID NO:  19:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  189 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  24..189
;      OTHER INFORMATION:  /note= "IFN-alpha-Gk-1"
US-08-026-758-19

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Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 6
US-09-949-016-9682
; Sequence 9682, Application US/09949016
; Patent No. 6812339
; GENERAL INFORMATION:
;  APPLICANT: VENTER, J. Craig et al.
;  TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
;  TITLE OF INVENTION:  WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
;  FILE REFERENCE: CL001307
;  CURRENT APPLICATION NUMBER: US/09/949,016
;  CURRENT FILING DATE:  2000-04-14
;  PRIOR APPLICATION NUMBER: 60/241,755
;  PRIOR FILING DATE: 2000-10-20
;  PRIOR APPLICATION NUMBER: 60/237,768
;  PRIOR FILING DATE: 2000-10-03
;  PRIOR APPLICATION NUMBER: 60/231,498
;  PRIOR FILING DATE: 2000-09-08
;  NUMBER OF SEQ ID NOS: 207012
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 9682
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Human
US-09-949-016-9682

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Qy        181 LQERLRRKE 189
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RESULT 7
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; Sequence 9683, Application US/09949016
; Patent No. 6812339
; GENERAL INFORMATION:
;  APPLICANT: VENTER, J. Craig et al.
;  TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
;  TITLE OF INVENTION:  WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
;  FILE REFERENCE: CL001307
;  CURRENT APPLICATION NUMBER: US/09/949,016
;  CURRENT FILING DATE:  2000-04-14
;  PRIOR APPLICATION NUMBER: 60/241,755
;  PRIOR FILING DATE: 2000-10-20
;  PRIOR APPLICATION NUMBER: 60/237,768
;  PRIOR FILING DATE: 2000-10-03
;  PRIOR APPLICATION NUMBER: 60/231,498
;  PRIOR FILING DATE: 2000-09-08
;  NUMBER OF SEQ ID NOS: 207012
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 9683
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Human
US-09-949-016-9683

  Query Match             88.8%;  Score 868;  DB 2;  Length 189;
  Best Local Similarity   87.8%;  Pred. No. 6.8e-92;
  Matches  166;  Conservative   12;  Mismatches   11;  Indels    0;  Gaps    0;

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Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
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Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 FQERLRRKE 189


RESULT 8
US-09-949-016-9684
; Sequence 9684, Application US/09949016
; Patent No. 6812339
; GENERAL INFORMATION:
;  APPLICANT: VENTER, J. Craig et al.
;  TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
;  TITLE OF INVENTION:  WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF
;  FILE REFERENCE: CL001307
;  CURRENT APPLICATION NUMBER: US/09/949,016
;  CURRENT FILING DATE:  2000-04-14
;  PRIOR APPLICATION NUMBER: 60/241,755
;  PRIOR FILING DATE: 2000-10-20
;  PRIOR APPLICATION NUMBER: 60/237,768
;  PRIOR FILING DATE: 2000-10-03
;  PRIOR APPLICATION NUMBER: 60/231,498
;  PRIOR FILING DATE: 2000-09-08
;  NUMBER OF SEQ ID NOS: 207012
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 9684
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Human
US-09-949-016-9684

  Query Match             88.8%;  Score 868;  DB 2;  Length 189;
  Best Local Similarity   87.8%;  Pred. No. 6.8e-92;
  Matches  166;  Conservative   12;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              || || ||||||||:||| |||||||||||||| ||| |:::|||||||||||||||||||
Db          1 MASPFALLMALVVLSCKSSCSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 FQERLRRKE 189


RESULT 9
US-08-026-758-1
; Sequence 1, Application US/08026758
; Patent No. 5780021
;  GENERAL INFORMATION:
;    APPLICANT:  SOBEL, DOUGLAS O.
;    TITLE OF INVENTION:  A METHOD FOR TREATING AUTOIMMUNE
;    TITLE OF INVENTION:  DISEASES USING ALPHA-INTERFERON AND/OR BETA-INTERFERON
;    NUMBER OF SEQUENCES:  26
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  OBLON, SPIVAK, McCLELLAND, MAIER & NEUSTADT,
;      ADDRESSEE:  P.C.
;      STREET:  1755 S. Jefferson Davis Highway, Suite 400
;      CITY:  Arlington
;      STATE:  Virginia
;      COUNTRY:  U.S.A.
;      ZIP:  22202
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/026,758
;      FILING DATE:  19930305
;      CLASSIFICATION:  424
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Oblon, No. 5780021man F.
;      REGISTRATION NUMBER:  24,618
;      REFERENCE/DOCKET NUMBER:  1126-096-0
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703) 413-3000
;      TELEFAX:  (703) 413-2220
;      TELEX:  248855 OPAT UR
;  INFORMATION FOR SEQ ID NO:  1:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  189 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  unknown
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  24..189
;      OTHER INFORMATION:  /note= "IFN-alpha consensus"
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  55
;      OTHER INFORMATION:  /note= "The one-letter code at position
;      OTHER INFORMATION:  55 appears to be a typographical error in Table 1 of the
;      OTHER INFORMATION:  specification."
;    FEATURE:
;      NAME/KEY:  Modified-site
;      LOCATION:  124
;      OTHER INFORMATION:  /note= "The one-letter code at position
;      OTHER INFORMATION:  124 appears to be a typographical error in Table 1 of the
;      OTHER INFORMATION:  specification."
US-08-026-758-1

  Query Match             87.4%;  Score 855;  DB 1;  Length 189;
  Best Local Similarity   86.8%;  Pred. No. 2.1e-90;
  Matches  164;  Conservative   12;  Mismatches   13;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::|||||||||||||| |||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKXRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||||||||||||||||||||||||||||||||||||||||| |||:||:|| ||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSAAWDESLLEKFSTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||: ||||||:||||| |||| ||||||||||||||||||||||||||||| | |
Db        121 ACVXQEVGVEETPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


RESULT 10
US-07-145-002B-24
; Sequence 24, Application US/07145002B
; Patent No. 6482613
; GENERAL INFORMATION:
;  APPLICANT: Goeddel, David V.
```

```
;  APPLICANT:  Pestka, Sidney
;  TITLE OF INVENTION: MICROBIAL PRODUCTION OF MATURE HUMAN
;  TITLE OF INVENTION:  LEUKOCYTE INTERFERONS
;  FILE REFERENCE: 1803-0088-999
;  CURRENT APPLICATION NUMBER: US/07/145,002B
;  CURRENT FILING DATE:  1989-01-19
;  NUMBER OF SEQ ID NOS: 70
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 24
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-07-145-002B-24

  Query Match             87.1%;  Score 852;  DB 2;  Length 189;
  Best Local Similarity   85.7%;  Pred. No. 4.8e-90;
  Matches  162;  Conservative   15;  Mismatches   12;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||| |:||||||:||| |||||:| |||||:||||||:|||| ||||||||||||||
Db          1 MALPFSLMMALVVLSCKSSCSLGCNLSQTHSLNNRRTLMLMAQMRRISPFSCLKDRHDFE 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||:||||||||||:||| ||||||:||| ||:||:||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMMQQTFNLFSTKNSSAAWDETLLEKFYIELFQQMNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:||||| |||| |||||||||||| |||||||||||||||||||| | |
Db        121 ACVIQEVGVEETPLMNEDSILAVRKYFQRITLYLMEKKYSPCAWEVVRAEIMRSFSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


RESULT 11
US-06-256-204C-24
; Sequence 24, Application US/06256204C
; Patent No. 6610830
; GENERAL INFORMATION:
;  APPLICANT: Goeddel, David V.
;  APPLICANT:  Pestka, Sidney
;  TITLE OF INVENTION: MICROBIAL PRODUCTION OF MATURE HUMAN
;  TITLE OF INVENTION:  LEUKOCYTE INTERFERONS
;  FILE REFERENCE: 1803-0025-999
;  CURRENT APPLICATION NUMBER: US/06/256,204C
;  CURRENT FILING DATE:  1981-04-21
;  NUMBER OF SEQ ID NOS: 85
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 24
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-06-256-204C-24

  Query Match             87.1%;  Score 852;  DB 2;  Length 189;
  Best Local Similarity   85.7%;  Pred. No. 4.8e-90;
  Matches  162;  Conservative   15;  Mismatches   12;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||| |:||||||:||| |||||:| |||||:||||||:|||| ||||||||||||||
Db          1 MALPFSLMMALVVLSCKSSCSLGCNLSQTHSLNNRRTLMLMAQMRRISPFSCLKDRHDFE 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||:||||||||||:||| ||||||:||| ||:||:||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMMQQTFNLFSTKNSSAAWDETLLEKFYIELFQQMNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:||||| |||| |||||||||||| |||||||||||||||||||| | |
Db        121 ACVIQEVGVEETPLMNEDSILAVRKYFQRITLYLMEKKYSPCAWEVVRAEIMRSFSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


RESULT 12
US-09-206-935-19
; Sequence 19, Application US/09206935
; Patent No. 6299877
; GENERAL INFORMATION:
;  APPLICANT: Chen, Jian
;  APPLICANT: Godowski, Paul
;  APPLICANT: Wood, William I.
;  APPLICANT: Zhang, Dong-Xiao
;  TITLE OF INVENTION: NOVEL TYPE I INTERFERONS
;  FILE REFERENCE: 11669.50US05
;  CURRENT APPLICATION NUMBER: US/09/206,935
;  CURRENT FILING DATE: 1998-12-07
;  EARLIER APPLICATION NUMBER: 60/084,045
;  EARLIER FILING DATE: 1998-05-04
;  NUMBER OF SEQ ID NOS: 24
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 19
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-206-935-19

  Query Match             87.0%;  Score 851;  DB 2;  Length 189;
  Best Local Similarity   86.2%;  Pred. No. 6.2e-90;
  Matches  163;  Conservative   15;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||:|
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDME 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||| |:||||||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 FQERLRRKE 189


RESULT 13
US-09-206-936-19
; Sequence 19, Application US/09206936A
; Patent No. 6300475
; GENERAL INFORMATION:
;  APPLICANT: Chen, Jian
;  APPLICANT: Wood, William I.
;  TITLE OF INVENTION: No. 6300475el Inteferon
;  FILE REFERENCE: P1224R1
;  CURRENT APPLICATION NUMBER: US/09/206,936A
;  CURRENT FILING DATE: 1998-12-07
;  EARLIER APPLICATION NUMBER: US 60/067,897
;  EARLIER FILING DATE: 1998-12-08
;  NUMBER OF SEQ ID NOS: 22
; SEQ ID NO 19
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-206-936-19

  Query Match             87.0%;  Score 851;  DB 2;  Length 189;
  Best Local Similarity   86.2%;  Pred. No. 6.2e-90;
  Matches  163;  Conservative   15;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
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Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||:|
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDME 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 FQERLRRKE 189


RESULT 14
US-07-145-002B-12
; Sequence 12, Application US/07145002B
; Patent No. 6482613
; GENERAL INFORMATION:
;  APPLICANT: Goeddel, David V.
;  APPLICANT:  Pestka, Sidney
;  TITLE OF INVENTION: MICROBIAL PRODUCTION OF MATURE HUMAN
;  TITLE OF INVENTION:  LEUKOCYTE INTERFERONS
;  FILE REFERENCE: 1803-0088-999
;  CURRENT APPLICATION NUMBER: US/07/145,002B
;  CURRENT FILING DATE:  1989-01-19
;  NUMBER OF SEQ ID NOS: 70
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 12
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-07-145-002B-12

  Query Match             87.0%;  Score 851;  DB 2;  Length 189;
  Best Local Similarity   86.2%;  Pred. No. 6.2e-90;
  Matches  163;  Conservative   15;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||||||||||||||||||||||||||||||||:::||:|| ||| |||||:|
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDME 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 FQERLRRKE 189


RESULT 15
US-07-145-002B-16
; Sequence 16, Application US/07145002B
; Patent No. 6482613
; GENERAL INFORMATION:
;  APPLICANT: Goeddel, David V.
;  APPLICANT:  Pestka, Sidney
;  TITLE OF INVENTION: MICROBIAL PRODUCTION OF MATURE HUMAN
;  TITLE OF INVENTION:  LEUKOCYTE INTERFERONS
;  FILE REFERENCE: 1803-0088-999
;  CURRENT APPLICATION NUMBER: US/07/145,002B
;  CURRENT FILING DATE:  1989-01-19
;  NUMBER OF SEQ ID NOS: 70
;  SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 16
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-07-145-002B-16

  Query Match             87.0%;  Score 851;  DB 2;  Length 189;
  Best Local Similarity   85.2%;  Pred. No. 6.2e-90;
  Matches  161;  Conservative   16;  Mismatches   12;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||| |:||||||:||| |||||:| |||||:||||||:|||| ||||||||||||||
Db          1 MALPFALMMALVVLSCKSSCSLGCNLSQTHSLNNRRTLMLMAQMRRISPFSCLKDRHDFE 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||||||||||||||||||:|||||||||:||| ||||||:||| ||:||:||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMMQQTFNLFSTKNSSAAWDETLLEKFYIELFQQMNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:||||| |||| |:||||||||| |||||||||||||||||| | |
Db        121 ACVIQEVGVEETPLMNEDSILAVKKYFQRITLYLMEKKYSPCAWEVVRAEIMRSFSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


Search completed: December 15, 2005, 13:02:43
Job time : 48 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: December 15, 2005, 12:49:23 ; Search time 230 Seconds
(without alignments)
579.760 Million cell updates/sec

Title: US-10-698-402-2
Perfect score: 978
Sequence: 1 MALPFVLLMALVVLNCKSIC.....EIMRSFSLSANLQERLRRKE 189

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2166443 seqs, 705528306 residues

Total number of hits satisfying chosen parameters: 2166443

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : UniProt_05.80:*
1: uniprot_sprot:*
2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	978	100.0	189	1	IFNA5_HUMAN	P01569 homo sapien
2	978	100.0	189	2	Q52LX3_HUMAN	Q52lx3 homo sapien
3	853	87.2	189	1	IFN21_HUMAN	P01568 homo sapien
4	853	87.2	189	2	Q5VWD1_HUMAN	Q5vwd1 homo sapien
5	845	86.4	189	1	IFN14_HUMAN	P01570 homo sapien
6	845	86.4	189	2	Q5VZ56_HUMAN	Q5vz56 homo sapien
7	838	85.7	189	1	IFNA6_HUMAN	P05013 homo sapien
8	838	85.7	189	2	Q5VYQ1_HUMAN	Q5vyq1 homo sapien
9	832	85.1	189	2	Q52LB8_HUMAN	Q52lb8 homo sapien
10	830	84.9	189	1	IFNA4_HUMAN	P05014 homo sapien
11	830	84.9	189	2	Q5VV15_HUMAN	Q5vv15 homo sapien
12	829	84.8	181	2	Q14608_HUMAN	Q14608 homo sapien
13	828	84.7	189	1	IFNA1_HUMAN	P01562 homo sapien
14	828	84.7	189	2	Q5VYQ2_HUMAN	Q5vyq2 homo sapien
15	821	83.9	189	1	IFN17_HUMAN	P01571 homo sapien
16	821	83.9	189	2	Q5VZ53_HUMAN	Q5vz53 homo sapien
17	820	83.8	189	1	IFN10_HUMAN	P01566 homo sapien
18	820	83.8	189	2	Q5VV13_HUMAN	Q5vv13 homo sapien
19	811	82.9	189	2	Q95J78_SAGOE	Q95j78 saguinus oe
20	809.5	82.8	188	2	Q6DJX8_HUMAN	Q6djx8 homo sapien
21	806.5	82.5	188	1	IFNA2_HUMAN	P01563 homo sapien
22	805	82.3	189	1	IFN16_HUMAN	P05015 homo sapien
23	805	82.3	189	2	Q5VV12_HUMAN	Q5vv12 homo sapien
24	795	81.3	189	1	IFNA7_HUMAN	P01567 homo sapien
25	795	81.3	189	2	Q5VV14_HUMAN	Q5vv14 homo sapien
26	794	81.2	189	2	Q14618_HUMAN	Q14618 homo sapien
27	792	81.0	189	2	Q95J77_SAGOE	Q95j77 saguinus oe
28	778	79.6	189	1	IFNA8_HUMAN	P32881 homo sapien
29	778	79.6	189	2	Q5VYQ3_HUMAN	Q5vyq3 homo sapien
30	773	79.0	174	2	Q8MJT1_SAISC	Q8mjt1 saimiri sci
31	742	75.9	184	1	IFNA4_HORSE	P05006 equus cabal
32	738	75.5	184	1	IFNA2_HORSE	P05004 equus cabal
33	736	75.3	184	1	IFNA1_HORSE	P05003 equus cabal
34	730	74.6	184	1	IFNA3_HORSE	P05005 equus cabal
35	728.5	74.5	166	2	Q86UP4_HUMAN	Q86up4 homo sapien
36	728	74.4	166	2	Q8WZ68_HUMAN	Q8wz68 homo sapien
37	674.5	69.0	154	2	Q6QNB6_HUMAN	Q6qnb6 homo sapien
38	670	68.5	189	1	IFNA1_PIG	P49879 sus scrofa
39	667	68.2	189	2	Q6VAB8_PIG	Q6vab8 sus scrofa
40	640	65.4	189	2	Q68IQ5_PIG	Q68iq5 sus scrofa
41	628	64.2	189	2	Q6QTF5_PIG	Q6qtf5 sus scrofa
42	625	63.9	189	1	IFNAB_BOVIN	P05008 bos taurus
43	624	63.8	189	1	IFNA1_BOVIN	P07348 bos taurus
44	624	63.8	189	1	IFNAH_BOVIN	P49878 bos taurus
45	619	63.3	166	2	Q5U8T2_PIG	Q5u8t2 sus scrofa

ALIGNMENTS

RESULT 1
IFNA5_HUMAN
ID IFNA5_HUMAN STANDARD; PRT; 189 AA.
AC P01569;
DT 21-JUL-1986 (Rel. 01, Created)
DT 13-AUG-1987 (Rel. 05, Last sequence update)
DT 10-MAY-2005 (Rel. 47, Last annotation update)
DE Interferon alpha-5 precursor (Interferon alpha-G) (LeIF G) (Interferon
DE alpha-61).
GN Name=IFNA5;
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC Homo.
OX NCBI_TaxID=9606;
RN [1]
RP NUCLEOTIDE SEQUENCE.
RX MEDLINE=86037205; PubMed=4057246;
RA Henco K., Brosius J., Fujisawa A., Fujisawa J.-I., Haynes J.R.,
RA Hochstadt J., Kovacic T., Pasek M., Schamboeck A., Schmid J.,
RA Todokoro K., Waelchli M., Nagata S., Weissmann C.;
RT "Structural relationship of human interferon alpha genes and
RT pseudogenes.";
RL J. Mol. Biol. 185:227-260(1985).
RN [2]
RP NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
RX PubMed=15164053; DOI=10.1038/nature02465;
RA Humphray S.J., Oliver K., Hunt A.R., Plumb R.W., Loveland J.E.,
RA Howe K.L., Andrews T.D., Searle S., Hunt S.E., Scott C.E., Jones M.C.,
RA Ainscough R., Almeida J.P., Ambrose K.D., Ashwell R.I.S.,
RA Babbage A.K., Babbage S., Bagguley C.L., Bailey J., Banerjee R.,
RA Barker D.J., Barlow K.F., Bates K., Beasley H., Beasley O., Bird C.P.,
RA Bray-Allen S., Brown A.J., Brown J.Y., Burford D., Burrill W.,
RA Burton J., Carder C., Carter N.P., Chapman J.C., Chen Y., Clarke G.,
RA Clark S.Y., Clee C.M., Clegg S., Collier R.E., Corby N., Crosier M.,
RA Cummings A.T., Davies J., Dhami P., Dunn M., Dutta I., Dyer L.W.,
RA Earthrowl M.E., Faulkner L., Fleming C.J., Frankish A.,
RA Frankland J.A., French L., Fricker D.G., Garner P., Garnett J.,
RA Ghori J., Gilbert J.G.R., Glison C., Grafham D.V., Gribble S.,
RA Griffiths C., Griffiths-Jones S., Grocock R., Guy J., Hall R.E.,
RA Hammond S., Harley J.L., Harrison E.S.I., Hart E.A., Heath P.D.,
RA Henderson C.D., Hopkins B.L., Howard P.J., Howden P.J., Huckle E.,
RA Johnson C., Johnson D., Joy A.A., Kay M., Keenan S., Kershaw J.K.,
RA Kimberley A.M., King A., Knights A., Laird G.K., Langford C.,
RA Lawlor S., Leongamornlert D.A., Leversha M., Lloyd C., Lloyd D.M.,
RA Lovell J., Martin S., Mashreghi-Mohammadi M., Matthews L., McLaren S.,
RA McLay K.E., McMurray A., Milne S., Nickerson T., Nisbett J.,
RA Nordsiek G., Pearce A.V., Peck A.I., Porter K.M., Pandian R.,
RA Pelan S., Phillimore B., Povey S., Ramsey Y., Rand V., Scharfe M.,
RA Sehra H.K., Shownkeen R., Sims S.K., Skuce C.D., Smith M.,
RA Steward C.A., Swarbreck D., Sycamore N., Tester J., Thorpe A.,
RA Tracey A., Tromans A., Thomas D.W., Wall M., Wallis J.M., West A.P.,
RA Whitehead S.L., Willey D.L., Williams S.A., Wilming L., Wray P.W.,
RA Young L., Ashurst J.L., Coulson A., Blocker H., Durbin R.,

```
RA   Sulston J.E., Hubbard T., Jackson M.J., Bentley D.R., Beck S.,
RA   Rogers J., Dunham I.;
RT   "DNA sequence and analysis of human chromosome 9.";
RL   Nature 429:369-374(2004).
RN   [3]
RP   NUCLEOTIDE SEQUENCE OF 57-189.
RC   TISSUE=Spleen;
RX   MEDLINE=81148795; PubMed=6163083;
RA   Goeddel D.V., Leung D.W., Dull T.J., Gross M., Lawn R.M.,
RA   McCandliss R., Seeburg P.H., Ullrich A., Yelverton E., Gray P.W.;
RT   "The structure of eight distinct cloned human leukocyte interferon
RT   cDNAs.";
RL   Nature 290:20-26(1981).
RN   [4]
RP   PROTEIN SEQUENCE OF 22-36.
RX   PubMed=15340161; DOI=10.1110/ps.04682504;
RA   Zhang Z., Henzel W.J.;
RT   "Signal peptide prediction based on analysis of experimentally
RT   verified cleavage sites.";
RL   Protein Sci. 13:2819-2824(2004).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ---------------------------------------------------------------------
CC   This Swiss-Prot entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use as long as its content is in no way modified and this statement is not
CC   removed.
CC   ---------------------------------------------------------------------
DR   EMBL; X02956; CAA26702.1; -; Genomic_DNA.
DR   EMBL; AL162420; CAH73189.1; -; Genomic_DNA.
DR   EMBL; V00541; CAA23802.1; -; mRNA.
DR   PIR; S43716; IVHUA7.
DR   HSSP; P01563; 1ITF.
DR   SMR; P01569; 24-189.
DR   Ensembl; ENSG00000147873; Homo sapiens.
DR   HGNC; HGNC:5426; IFNA5.
DR   MIM; 147565; -.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; TAS.
DR   InterPro; IPR000471; Interferon_abd.
DR   PANTHER; PTHR11691; Interferon_abd; 1.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine; Direct protein sequencing;
KW   Multigene family; Signal.
FT   SIGNAL       1     21
FT   CHAIN       22    189       Interferon alpha-5.
FT   DISULFID    24    122       By similarity.
FT   DISULFID    52    162       By similarity.
SQ   SEQUENCE   189 AA;  21942 MW;  C605992FE2E78043 CRC64;

  Query Match             100.0%;  Score 978;  DB 1;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-76;
  Matches  189;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 2
Q52LX3_HUMAN
ID   Q52LX3_HUMAN PRELIMINARY;      PRT;   189 AA.
AC   Q52LX3;
DT   13-SEP-2005 (TrEMBLrel. 31, Created)
DT   13-SEP-2005 (TrEMBLrel. 31, Last sequence update)
DT   13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
DE   Interferon, alpha 5.
GN   Name=IFNA5;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RC   TISSUE=Brain;
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RC   TISSUE=Brain;
RG   NIH MGC Project;
RL   Submitted (APR-2005) to the EMBL/GenBank/DDBJ databases.
CC   -!- SUBCELLULAR LOCATION: Secreted (By similarity).
DR   EMBL; BC093757; AAH93757.1; -; mRNA.
DR   EMBL; BC093755; AAH93755.1; -; mRNA.
DR   GO; GO:0005576; C:extracellular region; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
KW   Antiviral defense; Cytokine.
SQ   SEQUENCE   189 AA;  21942 MW;  C605992FE2E78043 CRC64;

  Query Match             100.0%;  Score 978;  DB 2;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-76;
  Matches  189;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189
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                 |||||||||
Db        181 LQERLRRKE 189


RESULT 3
IFN21_HUMAN
ID   IFN21_HUMAN    STANDARD;      PRT;   189 AA.
AC   P01568;
DT   21-JUL-1986 (Rel. 01, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   10-MAY-2005 (Rel. 47, Last annotation update)
DE   Interferon alpha-21 precursor (Interferon alpha-F) (LeIF F).
GN   Name=IFNA21;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=81148795; PubMed=6163083;
RA   Goeddel D.V., Leung D.W., Dull T.J., Gross M., Lawn R.M.,
RA   McCandliss R., Seeburg P.H., Ullrich A., Yelverton E., Gray P.W.;
RT   "The structure of eight distinct cloned human leukocyte interferon
RT   cDNAs.";
RL   Nature 290:20-26(1981).
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RA   Gren E.Y., Berzin V.M., Tsimanis A.Y., Apsalon U.R., Vishnevskii Y.I.,
RA   Yansone I.V., Dishler A.V., Pudova N.V., Smorodintsev A.A.,
RA   Iovlev V.I., Stepanov A.N., Feldmane G.Y., Meldrais Y.A., Lozha V.P.,
RA   Kavsan V.M., Efimov V.A., Sverdlov E.D.;
RT   "A new type of leukocytic interferon.";
RL   Dokl. Biochem. 269:91-95(1983).
RN   [3]
RP   NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA].
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [4]
RP   PROTEIN SEQUENCE OF 24-58.
RX   MEDLINE=98087498; PubMed=9425112;
RA   Nyman T.A., Toeloe H., Parkkinen J., Kalkkinen N.;
RT   "Identification of nine interferon-alpha subtypes produced by Sendai
RT   virus-induced human peripheral blood leucocytes.";
RL   Biochem. J. 329:295-302(1998).
RN   [5]
RP   ABSENCE OF POLYMORPHISM.
RX   MEDLINE=97067358; PubMed=8910771;
RA   Hussain M., Gill D.S., Liao M.-J.;
RT   "Identification of interferon-alpha 7, -alpha 14, and -alpha 21
RT   variants in the genome of a large human population.";
RL   J. Interferon Cytokine Res. 16:853-859(1996).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ---------------------------------------------------------------------
CC   This Swiss-Prot entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use as long as its content is in no way modified and this statement is not
CC   removed.
CC   ---------------------------------------------------------------------
DR   EMBL; M12350; AAA52718.1; -; mRNA.
DR   EMBL; V00540; CAA23801.1; -; mRNA.
DR   EMBL; X00145; CAA24980.1; -; mRNA.
DR   EMBL; BC069329; AAH69329.1; -; mRNA.
DR   EMBL; BC069372; AAH69372.1; -; mRNA.
DR   EMBL; BC069408; AAH69408.1; -; mRNA.
DR   PIR; A01832; IVHUF.
DR   PIR; I84464; I84464.
DR   HSSP; P01563; 1ITF.
DR   SMR; P01568; 24-189.
DR   Ensembl; ENSG00000137080; Homo sapiens.
DR   HGNC; HGNC:5424; IFNA21.
DR   MIM; 147584; -.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; TAS.
DR   InterPro; IPR000471; Interferon_abd.
DR   PANTHER; PTHR11691; Interferon_abd; 1.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine; Direct protein sequencing;
KW   Multigene family; Signal.
FT   SIGNAL        1     23
FT   CHAIN        24    189       Interferon alpha-21.
FT   DISULFID     24    122       By similarity.
FT   DISULFID     52    162       By similarity.
FT   CONFLICT    119    119       L -> M (in Ref. 1).
SQ   SEQUENCE   189 AA;  21741 MW;  F0B6C9C392905802 CRC64;

  Query Match             87.2%;  Score 853;  DB 1;  Length 189;
  Best Local Similarity   86.8%;  Pred. No. 7.6e-66;
  Matches  164;  Conservative   14;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::|||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:|||||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
                |||||||
Db        181 FQERLRRKE 189


RESULT 4
Q5VWD1_HUMAN
ID   Q5VWD1_HUMAN PRELIMINARY;      PRT;   189 AA.
AC   Q5VWD1;
DT   01-FEB-2005 (TrEMBLrel. 29, Created)
DT   01-FEB-2005 (TrEMBLrel. 29, Last sequence update)
DT   13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
DE   Interferon, alpha 21.
GN   Name=IFNA21; ORFNames=RP11-113D19.8-001;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
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```
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RA   Martin S.;
RL   Submitted (MAY-2005) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RC   TISSUE=PCR rescued clones;
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [3]
RP   NUCLEOTIDE SEQUENCE.
RC   TISSUE=PCR rescued clones;
RG   NIH MGC Project;
RL   Submitted (MAY-2005) to the EMBL/GenBank/DDBJ databases.
CC   -!- SUBCELLULAR LOCATION: Secreted (By similarity).
DR   EMBL; AL390882; CAH70157.1; -; Genomic_DNA.
DR   EMBL; BC096699; AAH96699.1; -; mRNA.
DR   SMR; Q5VWD1; 24-189.
DR   Ensembl; ENSG00000137080; Homo sapiens.
DR   GO; GO:0005576; C:extracellular region; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine.
SQ   SEQUENCE   189 AA;  21741 MW;  F0B6C9C392905802 CRC64;

  Query Match             87.2%;  Score 853;  DB 2;  Length 189;
  Best Local Similarity   86.8%;  Pred. No. 7.6e-66;
  Matches  164;  Conservative   14;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | |||::||: |||||||||||||||| ||| |:::||||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:||||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 FQERLRRKE 189


RESULT 5
IFN14_HUMAN
ID   IFN14_HUMAN    STANDARD;      PRT;   189 AA.
AC   P01570;
DT   21-JUL-1986 (Rel. 01, Created)
DT   21-JUL-1986 (Rel. 01, Last sequence update)
DT   10-MAY-2005 (Rel. 47, Last annotation update)
DE   Interferon alpha-14 precursor (Interferon alpha-H) (LeIF H)
DE   (Interferon lambda-2-H).
GN   Name=IFNA14;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=86037205; PubMed=4057246;
RA   Henco K., Brosius J., Fujisawa A., Fujisawa J.-I., Haynes J.R.,
RA   Hochstadt J., Kovacic T., Pasek M., Schamboeck A., Schmid J.,
RA   Todokoro K., Waelchli M., Nagata S., Weissmann C.;
RT   "Structural relationship of human interferon alpha genes and
RT   pseudogenes.";
RL   J. Mol. Biol. 185:227-260(1985).
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=81201124; PubMed=6165082;
RA   Lawn R.M., Adelman J., Dull T.J., Gross M., Goeddel D.V., Ullrich A.;
RT   "DNA sequence of two closely linked human leukocyte interferon
RT   genes.";
RL   Science 212:1159-1162(1981).
RN   [3]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=81148795; PubMed=6163083;
RA   Goeddel D.V., Leung D.W., Dull T.J., Gross M., Lawn R.M.,
RA   McCandliss R., Seeburg P.H., Ullrich A., Yelverton E., Gray P.W.;
RT   "The structure of eight distinct cloned human leukocyte interferon
RT   cDNAs.";
RL   Nature 290:20-26(1981).
RN   [4]
RP   NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA].
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [5]
RP   PROTEIN SEQUENCE OF 24-53, AND CARBOHYDRATE-LINKAGE SITE ASN-95.
RX   MEDLINE=98087498; PubMed=9425112;
RA   Nyman T.A., Toeloe H., Parkkinen J., Kalkkinen N.;
RT   "Identification of nine interferon-alpha subtypes produced by Sendai
RT   virus-induced human peripheral blood leucocytes.";
RL   Biochem. J. 329:295-302(1998).
RN   [6]
RP   ABSENCE OF POLYMORPHISM.
RX   MEDLINE=97067358; PubMed=8910771;
RA   Hussain M., Gill D.S., Liao M.-J.;
RT   "Identification of interferon-alpha 7, -alpha 14, and -alpha 21
RT   variants in the genome of a large human population.";
```

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RL   J. Interferon Cytokine Res. 16:853-859(1996).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ---------------------------------------------------------------------
CC   This Swiss-Prot entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use as long as its content is in no way modified and this statement is not
CC   removed.
CC   ---------------------------------------------------------------------
DR   EMBL; V00533; CAA23794.1; -; Genomic_DNA.
DR   EMBL; X02959; CAA26705.1; -; Genomic_DNA.
DR   EMBL; V00542; CAA23803.1; -; mRNA.
DR   EMBL; BC074956; AAH74956.1; -; mRNA.
DR   PIR; A92916; IVHU14.
DR   HSSP; P01563; 1ITF.
DR   SMR; P01570; 24-189.
DR   GlycoSuiteDB; P01570; -.
DR   HGNC; HGNC:5420; IFNA14.
DR   MIM; 147579; -.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; TAS.
DR   InterPro; IPR000471; Interferon_abd.
DR   PANTHER; PTHR11691; Interferon_abd; 1.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine; Direct protein sequencing; Glycoprotein;
KW   Multigene family; Signal.
FT   SIGNAL        1     23
FT   CHAIN        24    189       Interferon alpha-14.
FT   CARBOHYD     95     95       N-linked (GlcNAc. . .).
FT   DISULFID     24    122       By similarity.
FT   DISULFID     52    162       By similarity.
FT   CONFLICT    175    175       L -> F (in Ref. 3).
SQ   SEQUENCE   189 AA;  22063 MW;  B6B71E2F0D644FE7 CRC64;

  Query Match             86.4%;  Score 845;  DB 1;  Length 189;
  Best Local Similarity   84.7%;  Pred. No. 3.8e-65;
  Matches  160;  Conservative   16;  Mismatches   13;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||| |:||||||:||| |||||:| |||||:||||||:|||| ||||||||||||||
Db          1 MALPFALMMALVVLSCKSSCSLGCNLSQTHSLNNRRTLMLMAQMRRISPFSCLKDRHDFE 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||:||||||||||:||| ||||||:||| ||:||:||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMMQQTFNLFSTKNSSAAWDETLLEKFYIELFQQMNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::|||||:||||| |||| |:|||||||||| |||||||||||||||||| | | |
Db        121 ACVIQEVGVEETPLMNEDSILAVKKYFQRITLYLMEKKYSPCAWEVVRAEIMRSLSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


RESULT 6
Q5VZ56_HUMAN
ID   Q5VZ56_HUMAN PRELIMINARY;      PRT;   189 AA.
AC   Q5VZ56;
DT   01-FEB-2005 (TrEMBLrel. 29, Created)
DT   01-FEB-2005 (TrEMBLrel. 29, Last sequence update)
DT   01-FEB-2005 (TrEMBLrel. 29, Last annotation update)
DE   Interferon, alpha 14.
GN   Name=IFNA14; ORFNames=RP11-380P16.9-001;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RA   Beasley H.;
RL   Submitted (MAY-2005) to the EMBL/GenBank/DDBJ databases.
CC   -!- SUBCELLULAR LOCATION: Secreted (By similarity).
DR   EMBL; AL162420; CAH73187.1; -; Genomic_DNA.
DR   SMR; Q5VZ56; 24-189.
DR   GO; GO:0005576; C:extracellular region; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine.
SQ   SEQUENCE   189 AA;  22063 MW;  B6B71E2F0D644FE7 CRC64;

  Query Match             86.4%;  Score 845;  DB 2;  Length 189;
  Best Local Similarity   84.7%;  Pred. No. 3.8e-65;
  Matches  160;  Conservative   16;  Mismatches   13;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||| |:||||||:||| |||||:| |||||:||||||:|||| ||||||||||||||
Db          1 MALPFALMMALVVLSCKSSCSLGCNLSQTHSLNNRRTLMLMAQMRRISPFSCLKDRHDFE 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||:||||||||||:||| ||||||:||| ||:||:||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMMQQTFNLFSTKNSSAAWDETLLEKFYIELFQQMNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::|||||:||||| |||| |:|||||||||| |||||||||||||||||| | | |
Db        121 ACVIQEVGVEETPLMNEDSILAVKKYFQRITLYLMEKKYSPCAWEVVRAEIMRSLSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


RESULT 7
IFNA6_HUMAN
ID   IFNA6_HUMAN     STANDARD;      PRT;   189 AA.
AC   P05013;
DT   13-AUG-1987 (Rel. 05, Created)
DT   13-AUG-1987 (Rel. 05, Last sequence update)
DT   10-MAY-2005 (Rel. 47, Last annotation update)
DE   Interferon alpha-6 precursor (Interferon alpha-K) (LeIF K) (Interferon
DE   alpha-54).
GN   Name=IFNA6;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=86037205; PubMed=4057246;
RA   Henco K., Brosius J., Fujisawa A., Fujisawa J.-I., Haynes J.R.,
RA   Hochstadt J., Kovacic T., Pasek M., Schamboeck A., Schmid J.,
RA   Todokoro K., Waelchli M., Nagata S., Weissmann C.;
RT   "Structural relationship of human interferon alpha genes and
RT   pseudogenes.";
RL   J. Mol. Biol. 185:227-260(1985).
RN   [2]
RP   NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA].
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
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RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [3]
RP   PROTEIN SEQUENCE OF 21-35.
RX   PubMed=15340161; DOI=10.1110/ps.04682504;
RA   Zhang Z., Henzel W.J.;
RT   "Signal peptide prediction based on analysis of experimentally
RT   verified cleavage sites.";
RL   Protein Sci. 13:2819-2824(2004).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ---------------------------------------------------------------------
CC   This Swiss-Prot entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use as long as its content is in no way modified and this statement is not
CC   removed.
CC   ---------------------------------------------------------------------
DR   EMBL; X02958; CAA26704.1; -; Genomic_DNA.
DR   EMBL; BC069471; AAH69471.1; -; mRNA.
DR   PIR; A23753; IVHUI6.
DR   HSSP; P01563; 1ITF.
DR   SMR; P05013; 24-189.
DR   Ensembl; ENSG00000120235; Homo sapiens.
DR   HGNC; HGNC:5427; IFNA6.
DR   MIM; 147566; -.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; NAS.
DR   GO; GO:0009615; P:response to virus; NAS.
DR   InterPro; IPR000471; Interferon_abd.
DR   PANTHER; PTHR11691; Interferon_abd; 1.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine; Direct protein sequencing;
KW   Multigene family; Signal.
FT   SIGNAL       1     20
FT   CHAIN       21    189       Interferon alpha-6.
FT   DISULFID    24    122       By similarity.
FT   DISULFID    52    162       By similarity.
SQ   SEQUENCE   189 AA;  22141 MW;  8C7F3F90F12C562E CRC64;

  Query Match             85.7%;  Score 838;  DB 1;  Length 189;
  Best Local Similarity   86.2%;  Pred. No. 1.5e-64;
  Matches  163;  Conservative    8;  Mismatches   18;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||| |||||||||:||| ||| |||||||||| :|||:|::||| ||| ||||||||||
Db          1 MALPFALLMALVVLSCKSSCSLDCDLPQTHSLGHRRTMMLLAQMRRISLFSCLKDRHDFR 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||||||||||:|||||||:|||||||||||||  ||| |||| ||||||||||||
Db         61 FPQEEFDGNQFQKAEAISVLHEVIQQTFNLFSTKDSSVAWDERLLDKLYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||:|||| |  ||||| |||| ||||||||||||||||||||||||||||| | |
Db        121 ACVMQEVWVGGTPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSSSRN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 8
Q5VYQ1_HUMAN
ID   Q5VYQ1_HUMAN PRELIMINARY;      PRT;   189 AA.
AC   Q5VYQ1;
DT   01-FEB-2005 (TrEMBLrel. 29, Created)
DT   01-FEB-2005 (TrEMBLrel. 29, Last sequence update)
DT   13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
DE   Interferon, alpha 6.
GN   Name=IFNA6; ORFNames=RP11-354P17.7-001;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RA   Beasley H.;
RL   Submitted (MAY-2005) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RC   TISSUE=PCR rescued clones;
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [3]
RP   NUCLEOTIDE SEQUENCE.
RC   TISSUE=PCR rescued clones;
RG   NIH MGC Project;
RL   Submitted (MAY-2005) to the EMBL/GenBank/DDBJ databases.
RN   [4]
RP   NUCLEOTIDE SEQUENCE.
RC   TISSUE=PCR rescued clones;
RG   NIH MGC Project;
RL   Submitted (JUN-2005) to the EMBL/GenBank/DDBJ databases.
CC   -!- SUBCELLULAR LOCATION: Secreted (By similarity).
DR   EMBL; AL353732; CAH72903.1; -; Genomic_DNA.
DR   EMBL; BC096710; AAH96710.1; -; mRNA.
DR   EMBL; BC096730; AAH96730.1; -; mRNA.
DR   EMBL; BC098357; AAH98357.1; -; mRNA.
DR   EMBL; BC096697; AAH96697.1; -; mRNA.
DR   SMR; Q5VYQ1; 24-189.
DR   Ensembl; ENSG00000120235; Homo sapiens.
DR   GO; GO:0005576; C:extracellular region; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   SMART; SM00076; IFabd; 1.
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DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine.
SQ   SEQUENCE   189 AA;  22141 MW;  8C7F3F90F12C562E CRC64;

  Query Match             85.7%;  Score 838;  DB 2;  Length 189;
  Best Local Similarity   86.2%;  Pred. No. 1.5e-64;
  Matches  163;  Conservative    8;  Mismatches   18;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||| |||||||:||| ||| ||||||||| :|||:|::||| ||| ||||||||||
Db          1 MALPFALLMALVVLSCKSSCSLDCDLPQTHSLGHRRTMMLLAQMRRISLFSCLKDRHDFR 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||:|||||||:|||||||||||||   ||| |||| ||||||||||||
Db         61 FPQEEFDGNQFQKAEAISVLHEVIQQTFNLFSTKDSSVAWDERLLDKLYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||:|||| |  ||||| |||| ||||||||||||||||||||||||||||| | |
Db        121 ACVMQEVWVGGTPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSSSRN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 9
Q52LB8_HUMAN
ID   Q52LB8_HUMAN PRELIMINARY;      PRT;   189 AA.
AC   Q52LB8;
DT   13-SEP-2005 (TrEMBLrel. 31, Created)
DT   13-SEP-2005 (TrEMBLrel. 31, Last sequence update)
DT   13-SEP-2005 (TrEMBLrel. 31, Last annotation update)
DE   Interferon, alpha 13.
GN   Name=IFNA13;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RC   TISSUE=Brain;
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RC   TISSUE=Brain;
RG   NIH MGC Project;
RL   Submitted (APR-2005) to the EMBL/GenBank/DDBJ databases.
CC   -!- SUBCELLULAR LOCATION: Secreted (By similarity).
DR   EMBL; BC093988; AAH93988.1; -; mRNA.
DR   SMR; Q52LB8; 24-189.
DR   Ensembl; ENSG00000120247; Homo sapiens.
DR   GO; GO:0005576; C:extracellular region; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine.
SQ   SEQUENCE   189 AA;  21697 MW;  442F8BB754D88398 CRC64;

  Query Match             85.1%;  Score 832;  DB 2;  Length 189;
  Best Local Similarity   84.7%;  Pred. No. 5e-64;
  Matches  160;  Conservative   10;  Mismatches   19;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              || || |||||||:||| |||||||:|||| ||||||::||| |||| ||| ||||||
Db          1 MASPFALLMALVVLSCKSSCSLGCDLPETHSLDNRRTLMLLAQMSRISPSSCLMDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||||||||||| |||||||:||| ||||:|||||| ||| ||||| ||||||||||
Db         61 FPQEEFDGNQFQKAPAISVLHELIQQIFNLFTTKDSSAAWDEDLLDKFCTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||:||| | :||||| |||| |:|||:|||||||||||||||||||||| ||| |
Db        121 ACVMQEERVGETPLMNADSILAVKKYFRRITLYLTEKKYSPCAWEVVRAEIMRSLSLSTN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 10
IFNA4_HUMAN
ID   IFNA4_HUMAN    STANDARD;      PRT;   189 AA.
AC   P05014; P13358;
DT   13-AUG-1987 (Rel. 05, Created)
DT   10-MAY-2005 (Rel. 47, Last sequence update)
DT   10-MAY-2005 (Rel. 47, Last annotation update)
DE   Interferon alpha-4 precursor (Interferon alpha-4B) (Interferon alpha-
DE   M1) (Interferon alpha-76).
GN   Name=IFNA4;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE, AND VARIANTS ALPHA-4B THR-74 AND VAL-137.
RX   MEDLINE=86037205; PubMed=4057246;
RA   Henco K., Brosius J., Fujisawa A., Fujisawa J.-I., Haynes J.R.,
RA   Hochstadt J., Kovacic T., Pasek M., Schamboeck A., Schmid J.,
RA   Todokoro K., Waelchli M., Nagata S., Weissmann C.;
RT   "Structural relationship of human interferon alpha genes and
RT   pseudogenes.";
RL   J. Mol. Biol. 185:227-260(1985).
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=84307815; PubMed=6089830;
RA   Linnane A.W., Beilharz M.W., McMullen G.L., Macreadie I.G., Murphy M.,
RA   Nisbet I.T., Novitski C.E., Woodrow G.C.;
RT   "Nucleotide sequence and expression in E. coli of a human interferon-
RT   alpha gene selected from a genomic library using synthetic
RT   oligonucleotides.";
RL   Biochem. Int. 8:725-732(1984).
RN   [3]
RP   NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA], AND VARIANT THR-74.
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
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RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [4]
RP   PROTEIN SEQUENCE OF 24-56.
RX   MEDLINE=98087498; PubMed=9425112;
RA   Nyman T.A., Toeloe H., Parkkinen J., Kalkkinen N.;
RT   "Identification of nine interferon-alpha subtypes produced by Sendai
RT   virus-induced human peripheral blood leucocytes.";
RL   Biochem. J. 329:295-302(1998).
RN   [5]
RP   POLYMORPHISM.
RX   MEDLINE=97474410; PubMed=9335434;
RA   Hussain M., Gill D.S., Liao M.-J.;
RT   "Both variant forms of interferon-alpha4 gene (IFNA4a and IFNA4b) are
RT   present in the human population.";
RL   J. Interferon Cytokine Res. 17:559-566(1997).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- POLYMORPHISM: Two forms exist; alpha-4a (shown here) and alpha-4b.
CC       They seem to be equally abundant.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ---------------------------------------------------------------------
CC   This Swiss-Prot entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use as long as its content is in no way modified and this statement is not
CC   removed.
CC   ---------------------------------------------------------------------
DR   EMBL; X02955; CAA26701.1; -; Genomic_DNA.
DR   EMBL; M27318; AAA52726.1; -; mRNA.
DR   EMBL; BC074965; AAH74965.1; -; mRNA.
DR   EMBL; BC074966; AAH74966.1; -; mRNA.
DR   PIR; E23753; IVHU4B.
DR   PIR; I52347; I52347.
DR   HSSP; P01563; 1ITF.
DR   SMR; P05014; 24-189.
DR   Ensembl; ENSG00000147877; Homo sapiens.
DR   HGNC; HGNC:5425; IFNA4.
DR   MIM; 147564; -.
DR   GO; GO:0005132; F:interferon-alpha/beta receptor binding; TAS.
DR   GO; GO:0009615; P:response to virus; TAS.
DR   InterPro; IPR000471; Interferon_abd.
DR   PANTHER; PTHR11691; Interferon_abd; 1.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine; Direct protein sequencing;
KW   Multigene family; Polymorphism; Signal.
FT   SIGNAL        1     23
FT   CHAIN        24    189       Interferon alpha-4.
FT   DISULFID     24    122       By similarity.
FT   DISULFID     52    162       By similarity.
FT   VARIANT      74     74       A -> T (in alpha-4B; dbSNP:1062571).
FT                                /FTId=VAR_013002.
FT   VARIANT     137    137       E -> V (in alpha-4B; dbSNP:3750480).
FT                                /FTId=VAR_013003.
SQ   SEQUENCE   189 AA;  21808 MW;  828DF9C33ABC337F CRC64;
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  Query Match            84.9%;  Score 830;  DB 1;  Length 189;
  Best Local Similarity   83.6%;  Pred. No. 7.5e-64;
  Matches  158;  Conservative   18;  Mismatches   13;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::|||||| ||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISHFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||:|||||:|||||||||||||||||||||||:|||| |:::||:|| ||||||||||
Db         61 FPEEEFDGHQFQKAQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:||||| |||| |||||||||||||||||||||||||||| | | |
Db        121 ACVIQEVGVEETPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189
```

```
RESULT 11
Q5VV15_HUMAN
ID   Q5VV15_HUMAN PRELIMINARY;      PRT;   189 AA.
AC   Q5VV15;
DT   01-FEB-2005 (TrEMBLrel. 29, Created)
DT   01-FEB-2005 (TrEMBLrel. 29, Last sequence update)
DT   01-FEB-2005 (TrEMBLrel. 29, Last annotation update)
DE   Interferon, alpha 4.
GN   Name=IFNA4; ORFNames=RP11-1P8.4-001;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RA   Pelan S.;
RL   Submitted (MAY-2005) to the EMBL/GenBank/DDBJ databases.
CC   -!- SUBCELLULAR LOCATION: Secreted (By similarity).
DR   EMBL; AL512606; CAH71188.1; -; Genomic_DNA.
DR   SMR; Q5VV15; 24-189.
DR   Ensembl; ENSG00000147877; Homo sapiens.
DR   GO; GO:0005615; C:extracellular space; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   GO; GO:0009615; P:response to virus; IEA.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine.
SQ   SEQUENCE   189 AA;  21808 MW;  828DF9C33ABC337F CRC64;
```

```
  Query Match            84.9%;  Score 830;  DB 2;  Length 189;
  Best Local Similarity   83.6%;  Pred. No. 7.5e-64;
  Matches  158;  Conservative   18;  Mismatches   13;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::|||||| ||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISHFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||:|||||:|||||||||||||||||||||||:|||| |:::||:|| ||||||||||
Db         61 FPEEEFDGHQFQKAQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:||||| |||| |||||||||||||||||||||||||||| | | |
Db        121 ACVIQEVGVEETPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTN 180
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```
Qy        181 LQERLRRKE 189
              ||:||||||:
Db        181 LQKRLRRKD 189


RESULT 12
Q14608_HUMAN
ID   Q14608_HUMAN PRELIMINARY;      PRT;   181 AA.
AC   Q14608;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   Leukocyte interferon-alpha.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=85056523; PubMed=6548765;
RA   Gren E., Berzin V.M., Jansone I., Tsimanis A., Vishnevsky Y.,
RA   Apsalons U.;
RT   "Novel human leukocyte interferon subtype and structural comparison of
RT   alpha interferon genes.";
RL   J. Interferon Res. 4:609-617(1984).
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RX   PubMed=3803589;
RA   Ohara O., Teraoka H.;
RT   "Anomalous behavior of human leukocyte interferon subtypes on
RT   polyacrylamide gel electrophoresis in the presence of dodecyl
RT   sulfate.";
RL   FEBS Lett. 211:78-82(1987).
CC   -!- SUBCELLULAR LOCATION: Secreted (By similarity).
DR   EMBL; M28586; AAA36041.1; -; mRNA.
DR   PIR; E25843; E25843.
DR   PIR; I56313; I56313.
DR   HSSP; P01563; 1ITF.
DR   SMR; Q14608; 16-181.
DR   GO; GO:0005615; C:extracellular space; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   GO; GO:0009615; P:response to virus; IEA.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine.
SQ   SEQUENCE   181 AA;  20878 MW;  3DB45120764EBABC CRC64;

  Query Match             84.8%;  Score 829;  DB 2;  Length 181;
  Best Local Similarity   87.3%;  Pred. No. 8.7e-64;
  Matches  158;  Conservative   14;  Mismatches    9;  Indels    0;  Gaps    0;

Qy          9 MALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDG 68
              ||::||: |||||||||||||||| ||| |:::|||||||||||||||||||||||||||
Db          1 MAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFGFPQEEFDG 60

Qy         69 NQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVG 128
              ||||||||||||||||||||||||||||:::||:|| ||| |||||||||::||||
Db         61 NQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDLEACVIQEVG 120

Qy        129 VEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRK 188
              ||:|||||||||| |:|||||||||||||||||||||||||||||||   |||||||
Db        121 VEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKIFQERLRRK 180

Qy        189 E 189
              |
Db        181 E 181


RESULT 13
IFNA1_HUMAN
ID   IFNA1_HUMAN    STANDARD;      PRT;   189 AA.
AC   P01562; Q14605; Q9UMJ3;
DT   21-JUL-1986 (Rel. 01, Created)
DT   21-JUL-1986 (Rel. 01, Last sequence update)
DT   10-MAY-2005 (Rel. 47, Last annotation update)
DE   Interferon alpha-1/13 precursor (Interferon alpha-D) (LeIF D).
GN   Name=IFNA1;
GN   and
GN   Name=IFNA13;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=81005094; PubMed=6157600; DOI=10.1016/0378-1119(80)90137-7;
RA   Mantei N., Schwarzstein M., Streuli M., Panem S., Nagata S.,
RA   Weissmann C.;
RT   "The nucleotide sequence of a cloned human leukocyte interferon
RT   cDNA.";
RL   Gene 10:1-10(1980).
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=80254543; PubMed=6157095;
RA   Taniguchi T., Mantei N., Schwarzstein M., Nagata S., Muramatsu M.,
RA   Weissmann C.;
RT   "Human leukocyte and fibroblast interferons are structurally
RT   related.";
RL   Nature 285:547-549(1980).
RN   [3]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=81148795; PubMed=6163083;
RA   Goeddel D.V., Leung D.W., Dull T.J., Gross M., Lawn R.M.,
RA   McCandliss R., Seeburg P.H., Ullrich A., Yelverton E., Gray P.W.;
RT   "The structure of eight distinct cloned human leukocyte interferon
RT   cDNAs.";
RL   Nature 290:20-26(1981).
RN   [4]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=85003592; PubMed=6479148;
RA   Todokoro K., Kioussis D., Weissmann C.;
RT   "Two non-allelic human interferon alpha genes with identical coding
RT   regions.";
RL   EMBO J. 3:1809-1812(1984).
RN   [5]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=86037205; PubMed=4057246;
RA   Henco K., Brosius J., Fujisawa A., Fujisawa J.-I., Haynes J.R.,
RA   Hochstadt J., Kovacic T., Pasek M., Schamboeck A., Schmid J.,
RA   Todokoro K., Waelchli M., Nagata S., Weissmann C.;
RT   "Structural relationship of human interferon alpha genes and
RT   pseudogenes.";
RL   J. Mol. Biol. 185:227-260(1985).
RN   [6]
RP   NUCLEOTIDE SEQUENCE.
RX   PubMed=2985969;
RA   Capon D.J., Shepard H.M., Goeddel D.V.;
RT   "Two distinct families of human and bovine interferon-alpha genes are
RT   coordinately expressed and encode functional polypeptides.";
RL   Mol. Cell. Biol. 5:768-779(1985).
RN   [7]
RP   NUCLEOTIDE SEQUENCE.
RA   Rostoks N.;
RL   Submitted (DEC-1993) to the EMBL/GenBank/DDBJ databases.
RN   [8]
RP   NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
RX   PubMed=15164053; DOI=10.1038/nature02465;
RA   Humphray S.J., Oliver K., Hunt A.R., Plumb R.W., Loveland J.E.,
RA   Howe K.L., Andrews T.D., Searle S., Hunt S.E., Scott C.E., Jones M.C.,
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RA   Ainscough R., Almeida J.P., Ambrose K.D., Ashwell R.I.S.,
RA   Babbage A.K., Babbage S., Bagguley C.L., Bailey J., Banerjee R.,
RA   Barker D.J., Barlow K.F., Bates K., Beasley H., Beasley O., Bird C.P.,
RA   Bray-Allen S., Brown A.J., Brown J.Y., Burford D., Burrill W.,
RA   Burton J., Carder C., Carter N.P., Chapman J.C., Chen Y., Clarke G.,
RA   Clark S.Y., Clee C.M., Clegg S., Collier R.E., Corby N., Crosier M.,
RA   Cummings A.T., Davies J., Dhami P., Dunn M., Dutta I., Dyer L.W.,
RA   Earthrowl M.E., Faulkner L., Fleming C.J., Frankish A.,
RA   Frankland J.A., French L., Fricker D.G., Garner P., Garnett J.,
RA   Ghori J., Gilbert J.G.R., Glison C., Grafham D.V., Gribble S.,
RA   Griffiths C., Griffiths-Jones S., Grocock R., Guy J., Hall R.E.,
RA   Hammond S., Harley J.L., Harrison E.S.I., Hart E.A., Heath P.D.,
RA   Henderson C.D., Hopkins B.L., Howard P.J., Howden P.J., Huckle E.,
RA   Johnson C., Johnson D., Joy A.A., Kay M., Keenan S., Kershaw J.K.,
RA   Kimberley A.M., King A., Knights A., Laird G.K., Langford C.,
RA   Lawlor S., Leongamornlert D.A., Leversha M., Lloyd C., Lloyd D.M.,
RA   Lovell J., Martin S., Mashreghi-Mohammadi M., Matthews L., McLaren S.,
RA   McLay K.E., McMurray A., Milne S., Nickerson T., Nisbett J.,
RA   Nordsiek G., Pearce A.V., Peck A.I., Porter K.M., Pandian R.,
RA   Pelan S., Phillimore B., Povey S., Ramsey Y., Rand V., Scharfe M.,
RA   Sehra H.K., Shownkeen R., Sims S.K., Skuce C.D., Smith M.,
RA   Steward C.A., Swarbreck D., Sycamore N., Tester J., Thorpe A.,
RA   Tracey A., Tromans A., Thomas D.W., Wall M., Wallis J.M., West A.P.,
RA   Whitehead S.L., Willey D.L., Williams S.A., Wilming L., Wray P.W.,
RA   Young L., Ashurst J.L., Coulson A., Blocker H., Durbin R.,
RA   Sulston J.E., Hubbard T., Jackson M.J., Bentley D.R., Beck S.,
RA   Rogers J., Dunham I.;
RT   "DNA sequence and analysis of human chromosome 9.";
RL   Nature 429:369-374(2004).
RN   [9]
RP   NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA].
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [10]
RP   NUCLEOTIDE SEQUENCE OF 24-189.
RX   MEDLINE=83299241; PubMed=6310510;
RA   Weber H., Weissmann C.;
RT   "Formation of genes coding for hybrid proteins by recombination
RT   between related, cloned genes in E. coli.";
RL   Nucleic Acids Res. 11:5661-5669(1983).
RN   [11]
RP   PROTEIN SEQUENCE OF 24-58.
RX   MEDLINE=98087498; PubMed=9425112;
RA   Nyman T.A., Toeloe H., Parkkinen J., Kalkkinen N.;
RT   "Identification of nine interferon-alpha subtypes produced by Sendai
RT   virus-induced human peripheral blood leucocytes.";
RL   Biochem. J. 329:295-302(1998).
RN   [12]
RP   POLYMORPHISM.
RX   MEDLINE=20485144; PubMed=11032395; DOI=10.1089/107999000050151021;
RA   Hussain M., Ni D., Gill D., Liao M.-J.;
RT   "IFN-alpha-1a gene is the major variant in the North American
RT   population.";
RL   J. Interferon Cytokine Res. 20:763-768(2000).

CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- POLYMORPHISM: Two forms exist; alpha-1a (shown here) and alpha-1b.
CC   -!- MISCELLANEOUS: Interferons alpha-1 and alpha-13 have identical
CC       protein sequences.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ---------------------------------------------------------------------
CC   This Swiss-Prot entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use as long as its content is in no way modified and this statement is not
CC   removed.
CC   ---------------------------------------------------------------------
DR   EMBL; J00210; AAB59403.1; -; Genomic_DNA.
DR   EMBL; V00537; CAA23798.1; -; mRNA.
DR   EMBL; V00538; CAA23799.1; -; mRNA.
DR   EMBL; X75934; CAA53538.1; -; Genomic_DNA.
DR   EMBL; AL353732; CAH72904.1; -; Genomic_DNA.
DR   EMBL; BC069427; AAH69427.1; -; mRNA.
DR   EMBL; BC074928; AAH74928.1; -; mRNA.
DR   EMBL; BC074929; AAH74929.1; -; mRNA.
DR   EMBL; M29884; AAA52714.1; -; Genomic_DNA.
DR   EMBL; X00803; CAA25381.1; -; Genomic_DNA.
DR   PIR; C23285; IVHUA1.
DR   HSSP; P01563; 1ITF.
DR   SMR; P01562; 24-189.
DR   Ensembl; ENSG00000147885; Homo sapiens.
DR   HGNC; HGNC:5417; IFNA1.
DR   HGNC; HGNC:5419; IFNA13.
DR   MIM; 147660; -.
DR   MIM; 147578; -.
DR   GO; GO:0005132; F:interferon-alpha/beta receptor binding; TAS.
DR   InterPro; IPR000471; Interferon_abd.
DR   PANTHER; PTHR11691; Interferon_abd; 1.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine; Direct protein sequencing;
KW   Multigene family; Polymorphism; Signal.
FT   SIGNAL       1     23
FT   CHAIN       24    189       Interferon alpha-1/13.
FT   DISULFID    24    122       By similarity.
FT   DISULFID    52    162       By similarity.
FT   VARIANT    137    137       A -> V (in alpha-1B; dbSNP:2230050).
FT                              /FTId=VAR_013000.
FT   CONFLICT    10     10       V -> A (in Ref. 7).
SQ   SEQUENCE   189 AA;  21725 MW;  F32F9CB969606B69 CRC64;

  Query Match             84.7%;  Score 828;  DB 1;  Length 189;
  Best Local Similarity   84.1%;  Pred. No. 1.1e-63;
  Matches  159;  Conservative   10;  Mismatches   20;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              || || ||| |||:||| ||||||||:|||| |||||::||| |||| ||| ||||||
Db          1 MASPFALLMVLVVLSCKSSCSLGCDLPETHSLDNRRTLMLLAQMSRISPSSCLMDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||| ||||||:||| ||||:|||||| ||| ||||| ||||||||||
Db         61 FPQEEFDGNQFQKAPAISVLHELIQQIFNLFTTKDSSAAWDEDLLDKFCTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||:|||  | :||||| |||| |:|||:|||||||||||||||||||||||| ||| |
Db        121 ACVMQEERVGETPLMNADSILAVKKYFRRITLYLTEKKYSPCAWEVVRAEIMRSLSLSTN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 14
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Q5VYQ2_HUMAN
ID   Q5VYQ2_HUMAN PRELIMINARY;      PRT;   189 AA.
AC   Q5VYQ2;
DT   01-FEB-2005 (TrEMBLrel. 29, Created)
DT   01-FEB-2005 (TrEMBLrel. 29, Last sequence update)
DT   01-FEB-2005 (TrEMBLrel. 29, Last annotation update)
DE   Interferon, alpha 1.
GN   Name=IFNA1; ORFNames=RP11-354P17.1-001;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RA   Beasley H.;
RL   Submitted (MAY-2005) to the EMBL/GenBank/DDBJ databases.
CC   -!- SUBCELLULAR LOCATION: Secreted (By similarity).
DR   EMBL; AL353732; CAH72911.1; -; Genomic_DNA.
DR   SMR; Q5VYQ2; 24-189.
DR   GO; GO:0005576; C:extracellular region; IEA.
DR   GO; GO:0005126; F:hematopoietin/interferon-class (D200-domain. . .; IEA.
DR   GO; GO:0006952; P:defense response; IEA.
DR   InterPro; IPR000471; Interferon_abd.
DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   SMART; SM00076; IFabd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine.
SQ   SEQUENCE   189 AA;  21725 MW;  F32F9CB969606B69 CRC64;

  Query Match             84.7%;  Score 828;  DB 2;  Length 189;
  Best Local Similarity   84.1%;  Pred. No. 1.1e-63;
  Matches  159;  Conservative   10;  Mismatches   20;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              || || ||| |||||:||| |||||||||:|||| ||||||::||| |||| ||| ||||||
Db          1 MASPFALLMVLVVLSCKSSCSLGCDLPETHSLDNRRTLMLLAQMSRISPSSCLMDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
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Db         61 FPQEEFDGNQFQKAPAISVLHELIQQIFNLFTTKDSSAAWDEDLLDKFCTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||:|||  | :||||| |||| |:|||:||||||||||||||||||||||||| ||| |
Db        121 ACVMQEERVGETPLMNADSILAVKKYFRRITLYLTEKKYSPCAWEVVRAEIMRSLSLSTN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 15
IFN17_HUMAN
ID   IFN17_HUMAN    STANDARD;      PRT;   189 AA.
AC   P01571; Q14639;
DT   21-JUL-1986 (Rel. 01, Created)
DT   01-OCT-1994 (Rel. 30, Last sequence update)
DT   13-SEP-2005 (Rel. 48, Last annotation update)
DE   Interferon alpha-17 precursor (Interferon alpha-I') (Interferon alpha-
DE   T) (Interferon alpha-88).
GN   Name=IFNA17;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini; Hominidae;
OC   Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=81201124; PubMed=6165082;
RA   Lawn R.M., Adelman J., Dull T.J., Gross M., Goeddel D.V., Ullrich A.;
RT   "DNA sequence of two closely linked human leukocyte interferon
RT   genes.";
RL   Science 212:1159-1162(1981).
RN   [2]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=85229953; PubMed=3891272;
RA   Mizoguchi J., Pitha P.M., Raj N.B.K.;
RT   "Efficient expression in Escherichia coli of two species of human
RT   interferon-alpha and their hybrid molecules.";
RL   DNA 4:221-232(1985).
RN   [3]
RP   NUCLEOTIDE SEQUENCE OF 14-189.
RX   MEDLINE=85235859; PubMed=4008999;
RA   Lund B., von Gabain A., Edlund T., Ny T., Lundgren E.;
RT   "Differential expression of interferon genes in a substrain of Namalwa
RT   cells.";
RL   J. Interferon Res. 5:229-238(1985).
RN   [4]
RP   NUCLEOTIDE SEQUENCE.
RX   MEDLINE=87024453; PubMed=3767336;
RA   Saveliev V.I., Zlochevsky M.L., Sorokin A.V., Naroditskaya V.A.,
RA   Bolotin A.P., Demyanova N.G., Kozlov Y.I., Neznanov N.S.,
RA   Gazaryan K.G., Monastyrskaya G.S., Sverdlov E.D.;
RT   "[Cloning and the determination of the nucleotide sequences in 2 genes
RT   of human leukocyte interferons].";
RL   Antibiot. Med. Biotekhnol. 31:592-596(1986).
RN   [5]
RP   PROTEIN SEQUENCE OF 24-58.
RX   MEDLINE=98087498; PubMed=9425112;
RA   Nyman T.A., Toeloe H., Parkkinen J., Kalkkinen N.;
RT   "Identification of nine interferon-alpha subtypes produced by Sendai
RT   virus-induced human peripheral blood leucocytes.";
RL   Biochem. J. 329:295-302(1998).
RN   [6]
RP   NUCLEOTIDE SEQUENCE OF 24-56.
RX   MEDLINE=92340576; PubMed=1634550;
RA   Zoon K.C., Miller D., Bekisz J., zur Nedden D., Enterline J.C.,
RA   Nguyen N.Y., Hu R.Q.;
RT   "Purification and characterization of multiple components of human
RT   lymphoblastoid interferon-alpha.";
RL   J. Biol. Chem. 267:15210-15216(1992).
RN   [7]
RP   VARIANT ARG-184.
RX   MEDLINE=98376207; PubMed=9712362;
RA   Hussain M., Tan T., Ni D., Gill D.S., Liao M.-J.;
RT   "A new allele of interferon-alpha17 gene encoding IFN-alpha17b is the
RT   major variant in human population.";
RL   J. Interferon Cytokine Res. 18:469-477(1998).
CC   -!- FUNCTION: Produced by macrophages, IFN-alpha have antiviral
CC       activities. Interferon stimulates the production of two enzymes: a
CC       protein kinase and an oligoadenylate synthetase.
CC   -!- SUBCELLULAR LOCATION: Secreted.
CC   -!- SIMILARITY: Belongs to the alpha/beta interferon family.
CC   ----------------------------------------------------------------------
CC   This Swiss-Prot entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use as long as its content is in no way modified and this statement is not
CC   removed.
CC   ----------------------------------------------------------------------
DR   EMBL; M11026; AAA52725.1; -; mRNA.
DR   EMBL; V00532; CAA23793.1; -; Genomic_DNA.
DR   EMBL; M38289; AAA59165.1; -; mRNA.
DR   EMBL; M71246; AAA52713.1; -; mRNA.
DR   PIR; A01835; IVHUA9.
DR   PIR; I56314; I56314.
DR   HSSP; P01563; 1ITF.
DR   SMR; P01571; 24-189.
DR   Ensembl; ENSG00000186809; Homo sapiens.
DR   HGNC; HGNC:5422; IFNA17.
DR   MIM; 147583; -.
DR   GO; GO:0005132; F:interferon-alpha/beta receptor binding; TAS.
DR   GO; GO:0009615; P:response to virus; TAS.
DR   InterPro; IPR000471; Interferon_abd.
DR   PANTHER; PTHR11691; Interferon_abd; 1.
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DR   Pfam; PF00143; Interferon; 1.
DR   PRINTS; PR00266; INTERFERONAB.
DR   ProDom; PD000550; Interferon_abd; 1.
DR   PROSITE; PS00252; INTERFERON_A_B_D; 1.
KW   Antiviral defense; Cytokine; Direct protein sequencing;
KW   Multigene family; Polymorphism; Signal.
FT   SIGNAL        1     23
FT   CHAIN        24    189       Interferon alpha-17.
FT   DISULFID     24    122       By similarity.
FT   DISULFID     52    162       By similarity.
FT   VARIANT     184    184       I -> R (in dbSNP:9298814).
FT                                /FTId=VAR_013020.
FT   CONFLICT     57     57       H -> P (in Ref. 1).
FT   CONFLICT     78     78       S -> P (in Ref. 3).
SQ   SEQUENCE   189 AA;  21728 MW;  0448EAEAB9D7FC32 CRC64;

  Query Match             83.9%;  Score 821;  DB 1;  Length 189;
  Best Local Similarity   82.5%;  Pred. No. 4.5e-63;
  Matches  156;  Conservative   18;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::|||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||||||||| ||||||||||||||||||:|||| |:::||:|| ||||||||:||
Db         61 LPQEEFDGNQFQKTQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNNLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||:|:|||| |||| ||||||||||||||||||||||||||| | | |
Db        121 ACVIQEVGMEETPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTN 180

Qy        181 LQERLRRKE 189
              ||: ||||:
Db        181 LQKILRRKD 189


Search completed: December 15, 2005, 13:01:52
Job time : 232 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: December 15, 2005, 12:54:29 ; Search time 38 Seconds
(without alignments)
478.552 Million cell updates/sec

Title: US-10-698-402-2
Perfect score: 978
Sequence: 1 MALPFVLLMALVVLNCKSIC.....EIMRSFSLSANLQERLRRKE 189

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_80:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	978	100.0	189	1	IVHUA7	interferon alpha-5
2	853	87.2	189	2	I84464	interferon-alpha-F
3	851	87.0	189	1	IVHUF	interferon alpha-I
4	846	86.5	167	2	D25843	interferon alpha-G
5	845	86.4	189	1	IVHU14	interferon alpha-I
6	838	85.7	189	1	IVHUI6	interferon alpha-I
7	832	85.1	189	1	IVHU4B	interferon alpha-I
8	830	84.9	189	2	I52347	interferon alpha-M
9	829	84.8	181	2	I56313	interferon alpha 2
10	828	84.7	189	1	IVHUA1	interferon alpha-1
11	824	84.3	189	2	I51970	interferon precurs
12	820	83.8	189	1	IVHUA5	interferon alpha-5
13	811	82.9	189	1	IVHUA9	interferon alpha-1
14	806.5	82.5	188	1	IVHUA2	interferon alpha-2
15	805	82.3	189	1	IVHU16	interferon alpha-I
16	805	82.3	189	2	I53102	interferon-alpha-J
17	795	81.3	189	1	IVHUA0	interferon alpha-7
18	794	81.2	189	2	I37584	IFN-alpha-N-protei
19	790	80.8	176	2	I56314	interferon-alpha -
20	778	79.6	189	1	IVHUI8	interferon alpha-I
21	773	79.0	167	2	E25843	interferon alpha-F
22	755	77.2	189	1	IVHUA4	interferon alpha-4
23	742	75.9	184	1	IVHOA4	interferon alpha-I
24	738	75.5	184	1	IVHOA2	interferon alpha-I
25	736	75.3	184	1	IVHOA1	interferon alpha-I
26	730	74.6	184	1	IVHOA3	interferon alpha-I
27	728.5	74.5	165	2	I78570	alpha 2 interferon
28	727	74.3	167	2	F25843	interferon alpha-J
29	691	70.7	162	2	C25843	interferon alpha-B
30	670	68.5	189	2	S23709	interferon alpha-1
31	625	63.9	189	1	IVBOIB	interferon alpha-I
32	624	63.8	189	1	IVBOI1	interferon alpha-I
33	619	63.3	189	1	IVBOID	interferon alpha-I
34	616	63.0	189	1	IVBOIA	interferon alpha-I
35	606	62.0	189	1	IVBOIC	interferon alpha-I
36	601	61.5	189	1	IVMSA1	interferon alpha-I
37	599	61.2	189	1	IVMSA5	interferon alpha-I
38	596	60.9	190	2	A24401	interferon alpha-I
39	590	60.3	190	2	I49774	alpha-interferon -
40	583	59.6	192	1	IVRTA1	interferon alpha-I
41	578	59.1	190	1	IVMSA2	interferon alpha-2
42	577	59.0	190	2	I49772	interferon alpha-7
43	570	58.3	190	2	I49775	interferon alpha-B
44	565	57.8	190	2	JH0468	interferon alpha-1
45	556	56.9	189	1	IVMSA6	interferon alpha-I

ALIGNMENTS

RESULT 1
IVHUA7
interferon alpha-5 precursor - human
N;Alternate names: interferon alpha-G
C;Species: Homo sapiens (man)
C;Date: 01-Sep-1981 #sequence_revision 29-Jan-1999 #text_change 09-Jul-2004
C;Accession: S43716; A01833
R;Henco, K.; Brosius, J.; Fujisawa, A.; Fujisawa, J.I.; Haynes, J.R.; Hochstadt, J.; Kov
J. Mol. Biol. 185, 227-260, 1985
A;Title: Structural relationship of human interferon alpha genes and pseudogenes.
A;Reference number: A92916; MUID:86037205; PMID:4057246
A;Accession: S43716
A;Molecule type: DNA
A;Residues: 1-189 <HEN>
A;Cross-references: UNIPROT:P01569; UNIPARC:UPI0000047760; EMBL:X02956; NID:g32659; PIDN
R;Goeddel, D.V.; Leung, D.W.; Dull, T.J.; Gross, M.; Lawn, R.M.; McCandliss, R.; Seeburg
Nature 290, 20-26, 1981
A;Title: The structure of eight distinct cloned human leukocyte interferon cDNAs.
A;Reference number: A93249; MUID:81148795; PMID:6163083
A;Accession: A01833
A;Molecule type: mRNA
A;Residues: 57-189 <GOE>
A;Cross-references: UNIPARC:UPI0000141F4A; GB:V00541; GB:J00213; NID:g32718; PIDN:CAA238
A;Note: eight classes of interferon alpha clones were identified; this sequence is deriv
C;Genetics:
A;Gene: GDB:IFNA5
A;Cross-references: GDB:136362; OMIM:147565
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral; cytokine; leukocyte
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-5 #status predicted <MAT>

Query Match 100.0%; Score 978; DB 1; Length 189;
Best Local Similarity 100.0%; Pred. No. 7.8e-82;
Matches 189; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189
```

```
RESULT 2
I84464
interferon-alpha-F - human
C;Species: Homo sapiens (man)
C;Date: 02-Aug-1996 #sequence_revision 02-Aug-1996 #text_change 09-Jul-2004
C;Accession: I84464; I37583
R;Gren, E.Y.; Berzin, V.M.; Tsimanis, A.Y.; Apsalon, U.R.; Vishnevskii, Y.I.; Yansone, I
.A.; Lozha, V.P.; Kavsan, V.M.; Efimov, V.A.; Sverdlov, E.D.
Dokl. Biochem. 269, 91-95, 1983
A;Title: A new type of leukocytic interferon.
A;Reference number: I37583
A;Accession: I84464
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-189 <RES>
A;Cross-references: UNIPROT:P01568; UNIPARC:UPI000002C35A; GB:M12350; NID:g184598; PIDN:
A;Accession: I37583
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-189 <RE2>
A;Cross-references: UNIPARC:UPI000002C35A; EMBL:X00145; NID:g32724; PIDN:CAA24980.1; PID
C;Genetics:
A;Gene: IFNA
C;Superfamily: interferon alpha

  Query Match             87.2%;  Score 853;  DB 2;  Length 189;
  Best Local Similarity   86.8%;  Pred. No. 1.9e-70;
  Matches  164;  Conservative   14;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::||||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:||||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              ||||||||
Db        181 FQERLRRKE 189


RESULT 3
IVHUF
interferon alpha-I-F precursor - human
N;Alternate names: HuIFN-alpha-I-F; LeIF F; type I interferon
C;Species: Homo sapiens (man)
C;Date: 01-Sep-1981 #sequence_revision 01-Sep-1981 #text_change 09-Jul-2004
C;Accession: A01832
R;Goeddel, D.V.; Leung, D.W.; Dull, T.J.; Gross, M.; Lawn, R.M.; McCandliss, R.; Seeburg
Nature 290, 20-26, 1981
A;Title: The structure of eight distinct cloned human leukocyte interferon cDNAs.
A;Reference number: A93249; MUID:81148795; PMID:6163083
A;Accession: A01832
A;Molecule type: mRNA
A;Residues: 1-189 <GOE>
A;Cross-references: UNIPROT:P01568; UNIPARC:UPI0000047762; GB:V00540; GB:J00212; NID:g32
A;Note: eight classes of interferon alpha clones were identified; this sequence is deriv
C;Genetics:
A;Gene: GDB:IFN1@
A;Cross-references: GDB:119328; OMIM:147660
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-I-F #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

  Query Match             87.0%;  Score 851;  DB 1;  Length 189;
  Best Local Similarity   86.2%;  Pred. No. 2.9e-70;
  Matches  163;  Conservative   15;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::||||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDME 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:||||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              ||||||||
Db        181 FQERLRRKE 189


RESULT 4
D25843
interferon alpha-G - human
N;Alternate names: human leukocyte interferon (IFN)
C;Species: Homo sapiens (man)
C;Date: 16-Aug-1988 #sequence_revision 16-Aug-1988 #text_change 15-Jun-1996
C;Accession: D25843
R;Ohara, O.; Teraoka, H.
FEBS Lett. 211, 78-82, 1987
A;Title: Anomalous behavior of human leukocyte interferon subtypes on polyacrylamide gel
A;Reference number: A91374; MUID:87105954; PMID:3803589
A;Accession: D25843
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-167 <OHA>
A;Cross-references: UNIPARC:UPI0000176717
C;Superfamily: interferon alpha

  Query Match             86.5%;  Score 846;  DB 2;  Length 167;
  Best Local Similarity   98.8%;  Pred. No. 7.1e-70;
  Matches  164;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          2 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 61

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              |||||||||||||||  ||||||||||||||||||||||||||||||||||||||||||
Db         62 IQQTFNLFSTKDSSAATDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 121

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              |||||||||||||||||||||||||||||||||||||||||||||
Db        122 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 167


RESULT 5
IVHU14
interferon alpha-I-14 precursor [validated] - human
N;Alternate names: HuIFN-alpha-I-14; lambda-2-h; type I interferon
C;Species: Homo sapiens (man)
C;Date: 01-Sep-1981 #sequence_revision 01-Sep-1981 #text_change 09-Jul-2004
C;Accession: A92916; A94255; B93249; PC2203; A01834; C23753
R;Henco, K.; Brosius, J.; Fujisawa, A.; Fujisawa, J.I.; Haynes, J.R.; Hochstadt, J.; Kov
J. Mol. Biol. 185, 227-260, 1985
A;Title: Structural relationship of human interferon alpha genes and pseudogenes.
A;Reference number: A92916; MUID:86037205; PMID:4057246
A;Accession: A92916
A;Molecule type: DNA
A;Residues: 1-189 <HEN>
A;Cross-references: UNIPROT:P01570; UNIPARC:UPI00000541D5; GB:X02959; NID:g32650; PIDN:C
R;Lawn, R.M.; Adelman, J.; Dull, T.J.; Gross, M.; Goeddel, D.; Ullrich, A.
```

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Science 212, 1159-1162, 1981
A;Title: DNA sequence of two closely linked human leukocyte interferon genes.
A;Reference number: A94255; MUID:81201124; PMID:6165082
A;Accession: A94255
A;Molecule type: DNA
A;Residues: 1-189 <LAW>
A;Cross-references: UNIPARC:UPI00000541D5; GB:V00533; GB:J00215; NID:g32635; PIDN:CAA237
R;Goeddel, D.V.; Leung, D.W.; Dull, T.J.; Gross, M.; Lawn, R.M.; McCandliss, R.; Seeburg
Nature 290, 20-26, 1981
A;Title: The structure of eight distinct cloned human leukocyte interferon cDNAs.
A;Reference number: A93249; MUID:81148795; PMID:6163083
A;Accession: B93249
A;Molecule type: mRNA
A;Residues: 1-174,'F',176-189 <GOE>
A;Cross-references: UNIPARC:UPI0000047764; GB:V00542; GB:J00214; NID:g32720; PIDN:CAA238
A;Note: a variant sequence differs from that shown in having 175-Phe, 182-Lys, and 184-G
R;Shirono, H.; Koga, J.; Uemura, H.; Matsuo, A.
Biosci. Biotechnol. Biochem. 58, 1714-1715, 1994
A;Title: Identification of glycosylated subtypes of interferon-alpha produced by human l
A;Reference number: PC2203; MUID:95036878; PMID:7765487
A;Accession: PC2203
A;Molecule type: protein
A;Residues: 'X',25-43 <SHI>
A;Cross-references: UNIPARC:UPI000017365E
A;Experimental source: leukocyte
C;Genetics:
A;Gene: GDB:IFNA14
A;Cross-references: GDB:136356; OMIM:147579
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral; glycoprotein
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-I-14 #status experimental <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted
F;25,95/Binding site: carbohydrate (Asn) (covalent) #status predicted

  Query Match             86.4%;  Score 845;  DB 1;  Length 189;
  Best Local Similarity   84.7%;  Pred. No. 1e-69;
  Matches  160;  Conservative   16;  Mismatches   13;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              |||||  |:|||||:|||  |||||:|  |||||:|||||:||||  ||||||||||||||
Db          1 MALPFALMMALVVLSCKSSCSLGCNLSQTHSLNNRRTLMLMAQMRRISPFSCLKDRHDFE 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||:||||||||||:|||  ||||||:|||  ||:||:||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMMQQTFNLFSTKNSSAAWDETLLEKFYIELFQQMNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||  ||||  |:||||||||||  ||||||||||||||||||| | | |
Db        121 ACVIQEVGVEETPLMNEDSILAVKKYFQRITLYLMEKKYSPCAWEVVRAEIMRSLSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


RESULT 6
IVHUI6
interferon alpha-I-6 precursor - human
N;Alternate names: HuIFN-alpha-I-6; LeIF K; type I interferon
C;Species: Homo sapiens (man)
C;Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #text_change 09-Jul-2004
C;Accession: A23753
R;Henco, K.; Brosius, J.; Fujisawa, A.; Fujisawa, J.I.; Haynes, J.R.; Hochstadt, J.; Kov
J. Mol. Biol. 185, 227-260, 1985
A;Title: Structural relationship of human interferon alpha genes and pseudogenes.
A;Reference number: A92916; MUID:86037205; PMID:4057246
A;Accession: A23753
A;Molecule type: DNA
A;Residues: 1-189 <HEN>
A;Cross-references: UNIPROT:P05013; UNIPARC:UPI000004775F; GB:X02958; NID:g32662; PIDN:C
C;Genetics:
A;Gene: GDB:IFNA6
A;Cross-references: GDB:136363; OMIM:147566
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-I-6 #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

  Query Match             85.7%;  Score 838;  DB 1;  Length 189;
  Best Local Similarity   86.2%;  Pred. No. 4.4e-69;
  Matches  163;  Conservative    8;  Mismatches   18;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              |||||  |||||||||:|||  |||  |||||||||  :|||:|::|||  |||  ||||||||||
Db          1 MALPFALLMALVVLSCKSSCSLDCDLPQTHSLGHRRTMMLLAQMRRISLFSCLKDRHDFR 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||:|||||||:|||||||||||||||  |||  ||||  ||||||||||||
Db         61 FPQEEFDGNQFQKAEAISVLHEVIQQTFNLFSTKDSSVAWDERLLDKLYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||:||||  |  |||||  ||||  |||||||||||||||||||||||||||||||||| | |
Db        121 ACVMQEVWVGGTPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSSSRN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 7
IVHU4B
interferon alpha-I-4b precursor - human
N;Alternate names: HuIFN-alpha-I-4b; type I interferon
C;Species: Homo sapiens (man)
C;Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #text_change 09-Jul-2004
C;Accession: E23753
R;Henco, K.; Brosius, J.; Fujisawa, A.; Fujisawa, J.I.; Haynes, J.R.; Hochstadt, J.; Kova
J. Mol. Biol. 185, 227-260, 1985
A;Title: Structural relationship of human interferon alpha genes and pseudogenes.
A;Reference number: A92916; MUID:86037205; PMID:4057246
A;Accession: E23753
A;Molecule type: DNA
A;Residues: 1-189 <HEN>
A;Cross-references: UNIPROT:P05014; UNIPARC:UPI0000047761; GB:X02955; NID:g32656; PIDN:CA
C;Genetics:
A;Gene: GDB:IFN1@
A;Cross-references: GDB:119328; OMIM:147660
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-I-4b #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

  Query Match             85.1%;  Score 832;  DB 1;  Length 189;
  Best Local Similarity   83.6%;  Pred. No. 1.6e-68;
  Matches  158;  Conservative   18;  Mismatches   13;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              |||  |  ||||::||:  |||||||||||||||  |||  |:::|||||||  ||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISHFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||:|||||:|||  |||||||||||||||||:||||  |:::||:||  ||||||||||||
Db         61 FPEEEFDGHQFQKTQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:||||||||  |||||||||||||||||||||||||||||||||| | | |
Db        121 ACVIQEVGVEETPLMNVDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTN 180

Qy        181 LQERLRRKE 189
              ||:||||||:
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Db        181 LQKRLRRKD 189


RESULT 8
I52347
interferon alpha-M1 precursor - human
C;Species: Homo sapiens (man)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004
C;Accession: I52347
R;Linnane, A.W.; Beilharz, M.W.; McMullen, G.L.; Macreadie, I.G.; Murphy, M.; Nisbet, I.
Biochem. Int. 8, 725-732, 1984
A;Title: Nucleotide sequence and expression in E. coli of a human interferon-alpha gene
A;Reference number: I52347; MUID:84307815; PMID:6089830
A;Accession: I52347
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-189 <RES>
A;Cross-references: UNIPROT:P05014; UNIPARC:UPI000002BA77; GB:M27318; NID:g184617; PIDN:
C;Genetics:
A;Gene: IFNA
C;Superfamily: interferon alpha

  Query Match             84.9%;  Score 830;  DB 2;  Length 189;
  Best Local Similarity   83.6%;  Pred. No. 2.4e-68;
  Matches  158;  Conservative   18;  Mismatches   13;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::|||||||| ||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISHFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||:|||||:|||||||||||||||||||||:|||| |:::||:|| ||||||||||
Db         61 FPEEEFDGHQFQKAQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::|||||||:||||| |||| ||||||||||||||||||||||||||| | | |
Db        121 ACVIQEVGVEETPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


RESULT 9
I56313
interferon alpha 21 - human
C;Species: Homo sapiens (man)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004
C;Accession: I56313
R;Gren, E.; Berzin, V.M.; Jansone, I.; Tsimanis, A.; Vishnevsky, Y.; Apsalons, U.
J. Interferon Res. 4, 609-617, 1984
A;Title: Novel human leukocyte interferon subtype and structural comparison of alpha int
A;Reference number: I56313; MUID:85056523; PMID:6548765
A;Accession: I56313
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-181 <RES>
A;Cross-references: UNIPROT:Q14608; UNIPARC:UPI000006E7D8; GB:M28586; NID:g184636; PIDN:
C;Genetics:
A;Gene: GDB:IFNA21
A;Cross-references: GDB:136360; OMIM:147584
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha

  Query Match             84.8%;  Score 829;  DB 2;  Length 181;
  Best Local Similarity   87.3%;  Pred. No. 2.8e-68;
  Matches  158;  Conservative   14;  Mismatches    9;  Indels    0;  Gaps    0;

Qy          9 MALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDG 68
              ||::||: |||||||||||||||| ||| |:::|||||||||||||||||||||||||
Db          1 MAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFGFPQEEFDG 60

Qy         69 NQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVG 128
              ||||||||||||||||||||||||||||||:::||:|| ||| |||||||||::||||
Db         61 NQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDLEACVIQEVG 120

Qy        129 VEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRK 188
              ||:|||||||||| |:|||||||||||||||||||||||||||||||   |||||||
Db        121 VEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKIFQERLRRK 180

Qy        189 E 189
              |
Db        181 E 181


RESULT 10
IVHUA1
interferon alpha-1 precursor - human
N;Alternate names: interferon alpha-13; interferon alpha-D; interferon alpha-I-1
C;Species: Homo sapiens (man)
C;Date: 22-May-1981 #sequence_revision 01-Sep-1981 #text_change 09-Jul-2004
C;Accession: C23285; A91467; A93226; A93249; I58213; S43715; S41196; A01826
R;Capon, D.J.; Shepard, H.M.; Goeddel, D.V.
Mol. Cell. Biol. 5, 768-779, 1985
A;Title: Two distinct families of human and bovine interferon-alpha genes are coordinate
A;Reference number: A93070; MUID:85187974; PMID:2985969
A;Accession: C23285
A;Molecule type: DNA
A;Residues: 1-189 <CAP>
A;Cross-references: UNIPROT:P01562; UNIPARC:UPI000002C6D3
R;Mantei, N.; Schwarzstein, M.; Streuli, M.; Panem, S.; Nagata, S.; Weissmann, C.
Gene 10, 1-10, 1980
A;Title: The nucleotide sequence of a cloned human leukocyte inteferon cDNA.
A;Reference number: A91467; MUID:81005094; PMID:6157600
A;Accession: A91467
A;Molecule type: mRNA
A;Residues: 1-189 <MAN>
A;Cross-references: UNIPARC:UPI000002C6D3; GB:V00537; NID:g32711; PIDN:CAA23798.1; PID:g3
R;Taniguchi, T.; Mantei, N.; Schwarzstein, M.; Nagata, S.; Muramatsu, M.; Weissmann, C.
Nature 285, 547-549, 1980
A;Title: Human leukocyte and fibroblast interferons are structurally related.
A;Reference number: A93226; MUID:80254543; PMID:6157095
A;Accession: A93226
A;Molecule type: mRNA
A;Residues: 1-189 <TAN>
A;Cross-references: UNIPARC:UPI000002C6D3
R;Goeddel, D.V.; Leung, D.W.; Dull, T.J.; Gross, M.; Lawn, R.M.; McCandliss, R.; Seeburg
Nature 290, 20-26, 1981
A;Title: The structure of eight distinct cloned human leukocyte interferon cDNAs.
A;Reference number: A93249; MUID:81148795; PMID:6163083
A;Accession: A93249
A;Molecule type: mRNA
A;Residues: 1-136,'V',138-189 <GOE>
A;Cross-references: UNIPARC:UPI0000141F49; GB:V00538; NID:g32713; PIDN:CAA23799.1; PID:g
A;Note: eight classes of interferon alpha clones were identified; this sequence is deriv
R;Weber, H.; Weissmann, C.
Nucleic Acids Res. 11, 5661-5669, 1983
A;Title: Formation of genes coding for hybrid proteins by recombination between related,
A;Reference number: I58213; MUID:83299241; PMID:6310510
A;Accession: I58213
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 24-189 <RES>
A;Cross-references: UNIPARC:UPI000002F8DA; GB:M29884; NID:g184583; PIDN:AAA52714.1; PID:
R;Henco, K.; Brosius, J.; Fujisawa, A.; Fujisawa, J.I.; Haynes, J.R.; Hochstadt, J.; Kov
J. Mol. Biol. 185, 227-260, 1985
A;Title: Structural relationship of human interferon alpha genes and pseudogenes.
A;Reference number: A92916; MUID:86037205; PMID:4057246
A;Accession: S43715
A;Molecule type: DNA
A;Residues: 1-189 <HEN>
A;Cross-references: UNIPARC:UPI000002C6D3; EMBL:X75934
R;Rostoks, N.
submitted to the EMBL Data Library, December 1993
A;Reference number: S41196
A;Accession: S41196
```

```
A;Molecule type: DNA
A;Residues: 1-9,'A',11-189 <ROS>
A;Cross-references: UNIPARC:UPI000002C35C; EMBL:X75934; NID:g439666; PIDN:CAA53538.1; PI
C;Genetics:
A;Gene: GDB:IFNA1
A;Cross-references: GDB:136353; OMIM:147660
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral; cytokine; leukocyte
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-1 #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

  Query Match             84.7%;  Score 828;  DB 1;  Length 189;
  Best Local Similarity   84.1%;  Pred. No. 3.6e-68;
  Matches  159;  Conservative   10;  Mismatches   20;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              || || ||| ||||:||| |||||||||:|||| |||||||::||| |||| ||| ||||||
Db          1 MASPFALLMVLVVLSCKSSCSLGCDLPETHSLDNRRTLMLLAQMSRISPSSCLMDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||||||||||| |||||||:||| ||||:|||||| ||| ||||| ||||||||||
Db         61 FPQEEFDGNQFQKAPAISVLHELIQQIFNLFTTKDSSAAWDEDLLDKFCTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||:|||  | :||||| |||| |:|||:|||||||||||||||||||||||||| ||| |
Db        121 ACVMQEERVGETPLMNADSILAVKKYFRRITLYLTEKKYSPCAWEVVRAEIMRSLSLSTN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 11
I51970
interferon precursor - human
C;Species: Homo sapiens (man)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 16-Jul-1999
C;Accession: I51970
R;Saveliev, V.I.; Zlochevsky, M.L.; Sorokin, A.V.; Naroditskaya, V.A.; Bolotin, A.P.; De
Antibiot. Med. Biotekhnol. 31, 592-596, 1986
A;Title: [Cloning and the determination of the nucleotide sequences in 2 genes of human
A;Reference number: I51970; MUID:87024453; PMID:3767336
A;Accession: I51970
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-189 <RES>
A;Cross-references: UNIPARC:UPI000016AB15; GB:M38289; NID:g186407; PIDN:AAA59165.1; PID:
C;Genetics:
A;Gene: IFNA
C;Superfamily: interferon alpha

  Query Match             84.3%;  Score 824;  DB 2;  Length 189;
  Best Local Similarity   82.5%;  Pred. No. 8.3e-68;
  Matches  156;  Conservative   18;  Mismatches   15;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::|||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||||||||| ||| ||||||||||||||:|||| |:::||:|| |||||||||:||
Db         61 LPQEEFDGNQFQKTQAIPVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNNLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||:|:||||| |||| |||||||||||||||||||||||||| | | |
Db        121 ACVIQEVGMEETPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


RESULT 12
IVHUA5
interferon alpha-5 precursor - human
C;Species: Homo sapiens (man)
C;Date: 01-Sep-1981 #sequence_revision 01-Sep-1981 #text_change 09-Jul-2004
C;Accession: A60937; A01830
R;Bartholomew, C.; Windass, J.D.
J. Interferon Res. 9, 407-417, 1989
A;Title: Identification of a functional allele of a human interferon-alpha gene previous
A;Reference number: A60937; MUID:89328015; PMID:2526839
A;Accession: A60937
A;Molecule type: DNA
A;Residues: 1-189 <BAR>
A;Cross-references: UNIPROT:P01566; UNIPARC:UPI0000047765
A;Note: this genomic sequence, SMTIII.1A, encodes a functional allele for alpha interfer
ence and is a pseudogene
R;Goeddel, D.V.; Leung, D.W.; Dull, T.J.; Gross, M.; Lawn, R.M.; McCandliss, R.; Seeburg,
Nature 290, 20-26, 1981
A;Title: The structure of eight distinct cloned human leukocyte interferon cDNAs.
A;Reference number: A93249; MUID:81148795; PMID:6163083
A;Accession: A01830
A;Molecule type: mRNA
A;Residues: 1-189 <GOE>
A;Cross-references: UNIPARC:UPI0000047765; GB:V00551; GB:J00209; NID:g32748; PIDN:CAA2381
A;Note: eight classes of interferon alpha clones were identified; this sequence is derive
C;Genetics:
A;Gene: GDB:IFNA5
A;Cross-references: GDB:136362; OMIM:147565
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: leukocyte
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-5 #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

  Query Match             83.8%;  Score 820;  DB 1;  Length 189;
  Best Local Similarity   82.5%;  Pred. No. 1.9e-67;
  Matches  156;  Conservative   17;  Mismatches   16;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |::: |||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLGQMGRISPFSCLKDRHDFR 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||||||||||||||||||||||||||||:|||| |:::||:|| ||||||||||
Db         61 IPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:||||| |||| |||||||||||| |:|||||||||||||||| | | |
Db        121 ACVIQEVGVEETPLMNEDSILAVRKYFQRITLYLIERKYSPCAWEVVRAEIMRSLSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


RESULT 13
IVHUA9
interferon alpha-17 precursor - human
N;Alternate names: interferon alpha-9; interferon alpha-I'
C;Species: Homo sapiens (man)
C;Date: 01-Sep-1981 #sequence_revision 01-Sep-1981 #text_change 09-Jul-2004
C;Accession: A01835; A22255; C42753
R;Lawn, R.M.; Adelman, J.; Dull, T.J.; Gross, M.; Goeddel, D.; Ullrich, A.
Science 212, 1159-1162, 1981
A;Title: DNA sequence of two closely linked human leukocyte interferon genes.
A;Reference number: A94255; MUID:81201124; PMID:6165082
A;Accession: A01835
A;Molecule type: DNA
A;Residues: 1-189 <LAW>
A;Cross-references: UNIPROT:P01571; UNIPARC:UPI0000141F4B; GB:J00216; GB:V00532; NID:g32
R;Mizoguchi, J.; Pitha, P.M.; Raj, N.B.K.
```

DNA 4, 221-232, 1985
A;Title: Efficient expression in Escherichia coli of two species of human interferon-alp
A;Reference number: A22255; MUID:85229953; PMID:3891272
A;Accession: A22255
A;Molecule type: mRNA
A;Residues: 1-56,'H',58-189 <MIZ>
A;Cross-references: UNIPARC:UPI0000052AF9; GB:M11026; NID:g184612; PIDN:AAA52725.1; PID:
R;Zoon, K.C.; Miller, D.; Bekisz, J.; zur Nedden, D.; Enterline, J.C.; Nguyen, N.Y.; Hu,
J. Biol. Chem. 267, 15210-15216, 1992
A;Title: Purification and characterization of multiple components of human lymphoblastoi
A;Reference number: A42753; MUID:92340576; PMID:1634550
A;Accession: C42753
A;Molecule type: protein
A;Residues: 'X',25-50,'XX',53-56 <ZOO>
A;Cross-references: UNIPARC:UPI000017365F
C;Genetics:
A;Gene: GDB:IFNA17
A;Cross-references: GDB:136358; OMIM:147583
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: leukocyte
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-17 #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

Query Match 82.9%; Score 811; DB 1; Length 189;
Best Local Similarity 82.0%; Pred. No. 1.3e-66;
Matches 155; Conservative 18; Mismatches 16; Indels 0; Gaps 0;

```
Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: ||||||||||||||| ||| |:::|||||||||||||||| |||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRPDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
               |||||||||||| |||||||||||||||||:|||| |:::||:|| |||||||||:||
Db         61 LPQEEFDGNQFQKTQAISVLHEMIQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNNLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||:|:||||| |||| ||||||||||||||||||||||||||| | | |
Db        121 ACVIQEVGMEETPLMNEDSILAVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTN 180

Qy        181 LQERLRRKE 189
              ||: ||||:
Db        181 LQKILRRKD 189
```

RESULT 14
IVHUA2
interferon alpha-2 precursor (allele a) [validated] - human
N;Alternate names: IFN-alpha2; interferon alpha-3; interferon alpha-A; leukocyte interfe
C;Species: Homo sapiens (man)
C;Date: 31-Oct-1980 #sequence_revision 01-Sep-1981 #text_change 09-Jul-2004
C;Accession: A93234; D93249; A93888; I59458; A94252; A25843; A01828; C61478; S15848; B42
R;Goeddel, D.V.; Yelverton, E.; Ullrich, A.; Heyneker, H.L.; Miozzari, G.; Holmes, W.; S
ss, M.; Familletti, P.C.; Pestka, S.
Nature 287, 411-416, 1980
A;Title: Human leukocyte interferon produced by Escherichia coli is biologically active.
A;Reference number: A93234; MUID:81052322; PMID:6159538
A;Accession: A93234
A;Molecule type: DNA
A;Residues: 1-188 <GOE>
A;Cross-references: UNIPROT:P01563; UNIPARC:UPI000012D643; GB:V00544; NID:g32730; PIDN:C
A;Experimental source: clone pL31
R;Goeddel, D.V.; Leung, D.W.; Dull, T.J.; Gross, M.; Lawn, R.M.; McCandliss, R.; Seeburg
Nature 290, 20-26, 1981
A;Title: The structure of eight distinct cloned human leukocyte interferon cDNAs.
A;Reference number: A93249; MUID:81148795; PMID:6163083
A;Accession: D93249
A;Molecule type: mRNA
A;Residues: 1-188 <GO2>
A;Cross-references: UNIPARC:UPI000012D643; GB:V00549; NID:g32744; PIDN:CAA23810.1; PID:g
A;Note: eight classes of interferon alpha clones were identified; this sequence is deriv
R;Lawn, R.M.; Gross, M.; Houck, C.M.; Franke, A.E.; Gray, P.V.; Goeddel, D.V.
Proc. Natl. Acad. Sci. U.S.A. 78, 5435-5439, 1981
A;Title: DNA sequence of a major human leukocyte interferon gene.
A;Reference number: A93888; MUID:82060261; PMID:6170983
A;Accession: A93888
A;Molecule type: DNA
A;Residues: 1-45,'R',47-188 <LAW>
A;Cross-references: UNIPARC:UPI0000034B3A; GB:J00207; NID:g184581; PIDN:AAB59402.1; PID:
A;Experimental source: clone lambda-alpha-2
R;Oliver, G.; Balbas, P.; Valle, F.; Soberon, X.; Bolivar, F.
Rev. Latinoam. Microbiol. 27, 141-150, 1985
A;Title: [Cloning of human leukocyte interferon cDNA and a strategy for its production i
A;Reference number: I59458; MUID:86069501; PMID:3906813
A;Accession: I59458
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-188 <RES>
A;Cross-references: UNIPARC:UPI000012D643; GB:M54886; NID:g186498; PIDN:AAA59181.1; PID:
R;Streuli, M.; Nagata, S.; Weissmann, C.
Science 209, 1343-1347, 1980
A;Title: At least three human type alpha interferons: structure of alpha2.
A;Reference number: A94252; MUID:81015442; PMID:6158094
A;Accession: A94252
A;Molecule type: mRNA
A;Residues: 7-45,'R',47-188 <STR>
A;Cross-references: UNIPARC:UPI000002C6D4; GB:V00548; NID:g32740; PIDN:CAA23809.1; PID:g
R;Ohara, O.; Teraoka, H.
FEBS Lett. 211, 78-82, 1987
A;Title: Anomalous behavior of human leukocyte interferon subtypes on polyacrylamide gel
A;Reference number: A91374; MUID:87105954; PMID:3803589
A;Accession: A25843
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 'M',24-188 <OHA>
A;Cross-references: UNIPARC:UPI000002C5A3
A;Note: engineered sequence of mature form expressed in Escherichia coli
R;Allen, G.; Fantes, K.H.
Nature 287, 408-411, 1980
A;Title: A family of structural genes for human lymphoblastoid (leukocyte-type) interfer
A;Reference number: A01828; MUID:81052321; PMID:6159537
A;Accession: A01828
A;Molecule type: protein
A;Residues: 24-42,'Z',44-45,'R',47-74,'A',76,'S',78-98,'X',100-105,'D',107-109,'P',111-1
A;Cross-references: UNIPARC:UPI000017365A; UNIPARC:UPI000017365B
A;Note: residues at positions 83, 86, and 139 may be Ile or possibly Leu; those at posit
A;Note: 57-Arg, 75-Thr, 77-Pro, and 96-Glx were also found
R;Fukuda, S.; Ando, S.; Sanou, O.; Taniai, M.; Fujii, M.; Masaki, N.; Nakamura, K.I.; An
Lymphokine Res. 7, 175-185, 1988
A;Title: Simultaneous production of natural human tumor necrosis factor-alpha, -beta and
A;Reference number: A61478; MUID:88301617; PMID:2841543
A;Accession: C61478
A;Molecule type: protein
A;Residues: 24-45,'R',47-53 <FUK>
A;Cross-references: UNIPARC:UPI000017365C
A;Experimental source: B-cel lymphoblastoid cel line BALL-1
R;Adolf, G.R.; Kalsner, I.; Ahorn, H.; Maurer-Fogy, I.; Cantell, K.
Biochem. J. 276, 511-518, 1991
A;Title: Natural human interferon-alpha-2 is O-glycosylated.
A;Reference number: S15848; MUID:91264809; PMID:2049076
A;Accession: S15848
A;Molecule type: protein
A;Residues: 24-45,'R',47-53 <BIO>
A;Cross-references: UNIPARC:UPI000017365C
A;Experimental source: leukocytes
R;Zoon, K.C.; Miller, D.; Bekisz, J.; zur Nedden, D.; Enterline, J.C.; Nguyen, N.Y.; Hu,
J. Biol. Chem. 267, 15210-15216, 1992
A;Title: Purification and characterization of multiple components of human lymphoblastoi
A;Reference number: A42753; MUID:92340576; PMID:1634550
A;Accession: B42753
A;Molecule type: protein
A;Residues: 'X',25-45,'R',47-51,'X',53-55,'XX',58-65 <ZOO>
A;Cross-references: UNIPARC:UPI000017365D
A;Experimental source: Sendai virus-induced Namalwa cells
R;Wetzel, R.

```
Nature 289, 606-607, 1981
A;Title: Assignment of the disulphide bonds of leukocyte interferon.
A;Reference number: A93244; MUID:81123083; PMID:6162107
A;Contents: annotation; disulfide bonds
R;Murgolo, N.J.; Windsor, W.T.; Hruza, A.; Reichert, P.; Tsarbopoulos, A.; Baldwin, S.;
Proteins 17, 62-74, 1993
A;Title: A homology model of human interferon alpha-2.
A;Reference number: A44748; MUID:94052087; PMID:8234245
A;Contents: annotation; theoretical model
R;Gewert, D.; Salom, C.; Barber, K.; Macbride, S.; Cooper, H.; Lewis, A.; Wood, J.; Crow
J. Interferon Res. 13, 227-231, 1993
A;Title: Analysis of interferon-alpha 2 sequences in human genomic DNA.
A;Reference number: I56312; MUID:93375201; PMID:8366289
A;Accession: I56312
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-72 <REW>
A;Cross-references: UNIPARC:UPI00000701A9; GB:S64979; NID:g408874; PIDN:AAD13960.1; PID:
R;Zhao, X.X.; Li, B.L.; Langer, J.A.; Van Riper, G.; Pestka, S.
Anal. Biochem. 178, 342-347, 1989
A;Title: Construction and phosphorylation of a fusion protein Hu-IFN-alpha A/gamma.
A;Reference number: I36908; MUID:89321045; PMID:2502045
A;Accession: I36909
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 'M',24-188 <RE2>
A;Cross-references: UNIPARC:UPI000002C5A3; EMBL:X15631; NID:g22771; PIDN:CAA33638.1; PID
C;Genetics:
A;Gene: GDB:IFNA2
A;Cross-references: GDB:136359; OMIM:147562
A;Map position: 9p22-9p22
C;Superfamily: interferon alpha
C;Keywords: antiviral; cytokine; glycoprotein; leukocyte
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-188/Product: interferon alpha-2 #status experimental <MAT>
F;24-121,52-161/Disulfide bonds: #status experimental
F;129/Binding site: carbohydrate (Thr) (covalent) #status experimental

  Query Match             82.5%;  Score 806.5;  DB 1;  Length 188;
  Best Local Similarity   83.1%;  Pred. No. 3.2e-66;
  Matches  157;  Conservative   12;  Mismatches   19;  Indels    1;  Gaps    1;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||:||:||:||| ||:|||||||||| :|||||::||| :|| ||||||||||
Db          1 MALTFALLVALLVLSCKSSCSVGCDLPQTHSLGSRRTLMLLAQMRKISLFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||| |||||||: | |||||||| |||||||||| ||||||||||||||||||||
Db         61 FPQEEF-GNQFQKAETIPVLHEMIQQIFNLFSTKDSSAAWDETLLDKFYTELYQQLNDLE 119

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::| ||| :|||| |||| ||||||||||||| |||||||||||||||||||||| |
Db        120 ACVIQGVGVTETPLMKEDSILAVRKYFQRITLYLKEKKYSPCAWEVVRAEIMRSFSLSTN 179

Qy        181 LQERLRRKE 189
              ||| || ||
Db        180 LQESLRSKE 188


RESULT 15
IVHU16
interferon alpha-I-16 precursor - human
N;Alternate names: HuIFN-alpha-I-16; interferon alpha-I-WA; type I interferon
C;Species: Homo sapiens (man)
C;Date: 28-Dec-1987 #sequence_revision 28-Dec-1987 #text_change 09-Jul-2004
C;Accession: G23753; A22068; I73334
R;Henco, K.; Brosius, J.; Fujisawa, A.; Fujisawa, J.I.; Haynes, J.R.; Hochstadt, J.; Kov
J. Mol. Biol. 185, 227-260, 1985
A;Title: Structural relationship of human interferon alpha genes and pseudogenes.
A;Reference number: A92916; MUID:86037205; PMID:4057246
A;Accession: G23753
A;Molecule type: DNA
A;Residues: 1-189 <HEN>
A;Cross-references: UNIPROT:P05015; UNIPARC:UPI0000047763; GB:X02957; NID:g32653; PIDN:C
R;Torczynski, R.M.; Fuke, M.; Bollon, A.P.
Proc. Natl. Acad. Sci. U.S.A. 81, 6451-6455, 1984
A;Title: Human genomic library screened with 17-base oligonucleotide probes yields a nove
A;Reference number: A22068; MUID:85038533; PMID:6387705
A;Accession: A22068
A;Molecule type: DNA
A;Residues: 1-189 <TOR>
A;Cross-references: UNIPARC:UPI0000047763; GB:K02055; NID:g184620; PIDN:AAA52727.1; PID:
R;Gren, E.; Berzin, V.M.; Jansone, I.; Tsimanis, A.; Vishnevsky, Y.; Apsalons, U.
J. Interferon Res. 4, 609-617, 1984
A;Title: Novel human leukocyte interferon subtype and structural comparison of alpha inte
A;Reference number: I56313; MUID:85056523; PMID:6548765
A;Accession: I73334
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-189 <RES>
A;Cross-references: UNIPARC:UPI0000047763; GB:M28585; NID:g184643; PIDN:AAA36042.1; PID:
C;Genetics:
A;Gene: GDB:IFNA16
A;Cross-references: GDB:136357; OMIM:147580
A;Map position: 9p22-9p22
A;Introns: #status absent
C;Superfamily: interferon alpha
C;Keywords: antiviral; cytokine; leukocyte
F;1-23/Domain: signal sequence #status predicted <SIG>
F;24-189/Product: interferon alpha-I-16 #status predicted <MAT>
F;24-122,52-162/Disulfide bonds: #status predicted

  Query Match             82.3%;  Score 805;  DB 1;  Length 189;
  Best Local Similarity   82.5%;  Pred. No. 4.5e-66;
  Matches  156;  Conservative   12;  Mismatches   21;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::||||||| |||||||:|||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISHFSCLKDRYDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||| |||||||||||||  |||||||||||||||||| |||||||||| ||:|||||||
Db         61 FPQEVFDGNQFQKAQAISAFHEMIQQTFNLFSTKDSSAAWDETLLDKFYIELFQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSFSTN 180
              ||: ||||||:  ||| |||| |||||||||||||  ||||||||||||||||||| | |
Db        121 ACVTQEVGVEEIALMNEDSILAVRKYFQRITLYLMGKKYSPCAWEVVRAEIMRSFSFSTN 180

Qy        181 LQERLRRKE 189
              ||: ||||:
Db        181 LQKGLRRKD 189


Search completed: December 15, 2005, 13:03:27
Job time : 39 secs
```

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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: December 15, 2005, 12:31:48 ; Search time 189 Seconds
(without alignments)
439.379 Million cell updates/sec

Title: US-10-698-402-2
Perfect score: 978
Sequence: 1 MALPFVLLMALVVLNCKSIC.....EIMRSFSLSANLQERLRRKE 189

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_21:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*
9: geneseqp2005s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	978	100.0	189	2	AAR07678	Aar07678 IFN-alpha
2	978	100.0	189	2	AAW70371	Aaw70371 Human int
3	978	100.0	189	5	ABB07431	Abb07431 Interfero
4	978	100.0	189	6	ABP70735	Abp70735 Human int
5	978	100.0	189	8	ADN10804	Adn10804 Human int
6	978	100.0	189	8	ADS16314	Ads16314 Human int
7	978	100.0	189	9	ADW02275	Adw02275 Human int
8	978	100.0	189	9	ADZ26753	Adz26753 Human IFN
9	975	99.7	189	6	ABP70736	Abp70736 Human int
10	974	99.6	189	1	AAP30230	Aap30230 Sequence
11	968	99.0	189	6	ABP70737	Abp70737 Human int
12	907	92.7	182	1	AAP30003	Aap30003 Sequence
13	880	90.0	280	9	AEC01739	Aec01739 IFN-IGAG-
14	864	88.3	166	1	AAP60304	Aap60304 Sequence
15	864	88.3	166	2	AAR67761	Aar67761 Interfero
16	864	88.3	166	4	AAB49160	Aab49160 Human int
17	864	88.3	166	8	ADL88853	Adl88853 Human cyt
18	864	88.3	166	8	ADO32377	Ado32377 Human int
19	864	88.3	166	9	ADW02305	Adw02305 Human int
20	864	88.3	167	1	AAP30231	Aap30231 Sequence
21	864	88.3	167	1	AAP30224	Aap30224 Sequence
22	864	88.3	167	1	AAP60690	Aap60690 E. coli t
23	864	88.3	167	2	AAR07679	Aar07679 IFN-alpha
24	859	87.8	189	1	AAP20110	Aap20110 Sequence
25	852	87.1	189	5	ABG68076	Abg68076 Human int
26	852	87.1	189	5	ABG68071	Abg68071 Human int
27	852	87.1	189	9	ADY67663	Ady67663 Human int
28	852	87.1	189	9	ADY67673	Ady67673 Human int
29	851	87.0	189	1	AAP20108	Aap20108 Sequence
30	851	87.0	189	5	AAU84283	Aau84283 Human end
31	851	87.0	189	5	ABB07436	Abb07436 Interfero
32	851	87.0	189	5	ABB07433	Abb07433 Interfero
33	851	87.0	189	5	AAG78570	Aag78570 Human int
34	851	87.0	189	6	ABB98719	Abb98719 Human alp
35	851	87.0	189	8	ADN10810	Adn10810 Human int
36	851	87.0	189	8	ADN10813	Adn10813 Human int
37	851	87.0	189	8	ADS16320	Ads16320 Human int
38	851	87.0	189	8	ADS16323	Ads16323 Human int
39	851	87.0	189	9	ADW02281	Adw02281 Human int
40	851	87.0	189	9	ADW02284	Adw02284 Human int
41	848	86.7	189	1	AAP30179	Aap30179 Sequence
42	848	86.7	189	1	AAP40123	Aap40123 Sequence
43	848	86.7	189	6	AAO15998	Aao15998 Mutant hu
44	847	86.6	167	1	AAP80052	Aap80052 Sequence
45	846	86.5	189	6	AAO15999	Aao15999 Mutant hu

ALIGNMENTS

RESULT 1
AAR07678
ID AAR07678 standard; protein; 189 AA.
XX
AC AAR07678;
XX
DT 10-MAR-2003 (revised)
DT 18-FEB-1991 (first entry)
XX
DE IFN-alpha 61.
XX
KW Human IFN; therapeutic compsn; IFN-alpha 176; IFN-alpha 61; IFN-beta 1.
XX
OS Homo sapiens.
XX
PN US4966843-A.
XX
PD 30-OCT-1990.
XX
PF 31-JUL-1985; 85US-00761180.
XX
PR 01-NOV-1982; 82US-00438991.
XX
PA (CETU) CETUS CORP.
XX
PI Mccormick FP, Innis MA, Ringold GM;
XX
DR WPI; 1990-347916/46.
DR N-PSDB; AAQ06495.
XX
PT Deoxyribonucleic acid constructs - operably linking human interferon-and
PT selective marker-genes and promoter and expression control sequences.
XX
PS Disclosure; Fig 8; 33pp; English.
XX
CC This recombinant human IFN-alpha 61 is encoded by a DNA construct contg.
CC the IFN-alpha 61 gene, a marker gene and expression control sequences. It
CC is produced in high yields without detectable amts. of host IFN. See also
CC AAQ06496-98. (Updated on 10-MAR-2003 to add missing OS field.)
XX
SQ Sequence 189 AA;

Query Match 100.0%; Score 978; DB 2; Length 189;
Best Local Similarity 100.0%; Pred. No. 1.7e-89;
Matches 189; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

```
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
                 |||||||||
Db        181 LQERLRRKE 189
```

RESULT 2
AAW70371
ID AAW70371 standard; protein; 189 AA.
XX
AC AAW70371;
XX
DT 26-NOV-1998 (first entry)
XX
DE Human interferon-alpha61 (IFN-alpha61).
XX
KW Human; interferon-alpha61; IFN-alpha61; production; CHO cell; cancer;
KW antiviral.
XX
OS Homo sapiens.
XX
PN US5795779-A.
XX
PD 18-AUG-1998.
XX
PF 12-AUG-1994; 94US-00288796.
XX
PR 01-NOV-1982; 82US-00438991.
PR 31-JUL-1985; 85US-00761180.
PR 29-JUN-1990; 90US-00546519.
PR 09-JAN-1992; 92US-00819626.
XX
PA (BERL-) BERLEX LAB INC.
PA (STRD) UNIV LELAND STANFORD JUNIOR.
XX
PI Ringold GM, Innis MA, Mccormick FP;
XX
DR WPI; 1998-466673/40.
DR N-PSDB; AAV33295.
XX
PT Interferon DNA transformed chinese hamster ovary cell culture - useful
PT for high yield recombinant production of correctly processed human
PT interferon-beta.
XX
PS Disclosure; Fig 10; 36pp; English.
XX
CC The present sequence represents a human interferon-alpha61 (IFN-alpha61).
CC The specification describes a construct for the production of IFNs in
CC chinese hamster ovary (CHO) cell culture compositions. IFNs are small,
CC species specific, mammalian, single chain polypeptides, produced in
CC response to inducers e.g. viruses, mitogens, proteins etc. They exhibit
CC antiviral, anti-proliferative and immunoregulatory properties and are
CC therefore useful as therapeutics in control of cancer and antiviral
CC diseases. The cell culture composition is useful for the recombinant
CC production of high amounts of IFN in CHO cells
XX
SQ Sequence 189 AA;

Query Match 100.0%; Score 978; DB 2; Length 189;
Best Local Similarity 100.0%; Pred. No. 1.7e-89;
Matches 189; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
```

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                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
                 |||||||||
Db        181 LQERLRRKE 189
```

RESULT 3
ABB07431
ID ABB07431 standard; peptide; 189 AA.
XX
AC ABB07431;
XX
DT 09-APR-2002 (first entry)
XX
DE Interferon-alpha5 protein fragment.
XX
KW Interferon-beta-2; IFN-beta2; neuroprotective; cytostatic; virucide;
KW antiarthritic; antirheumatic; gene therapy; interferon-alpha5.
XX
OS Unidentified.
XX
PN WO200195929-A2.
XX
PD 20-DEC-2001.
XX
PF 18-JUN-2001; 2001WO-US041022.
XX
PR 16-JUN-2000; 2000US-0212046P.
PR 15-JUN-2001; 2001US-00881050.
XX
PA (SCHD) SCHERING AG.
XX
PI Croze EM, Faulds D, Wagner TC;
XX
DR WPI; 2002-130714/17.
XX
PT Composition for treating multiple sclerosis, cancer and viral diseases
PT and infections, comprises human interferon-beta-2 or its biologically-
PT active fragment or derivative.
XX
PS Disclosure; Fig 4; 61pp; English.
XX
CC The invention relates to a pharmaceutical composition comprising a
CC therapeutically effective amount of human interferon-beta-2 (IFN-beta2)
CC polypeptide. The composition is useful for treating multiple sclerosis in
CC mammals, in particular a human in need of such treatment, and also cancer
CC e.g. intraepithelial neoplasia and cervical cancer, autoimmune diseases
CC e.g. rheumatoid arthritis and viral diseases or infections. The
CC composition is useful for anti-oncogene regulation, antitumour activity,
CC antiviral activity, cell growth inhibition or antigrowth activity, anti-
CC proliferation, enhancement of cytotoxicity of lymphocytes, inducement or
CC inhibition of differentiation of target cells, immunoregulatory activity,
CC macrophage activation and down-regulation of oncogenes. Sequences
CC ABB07427-441 represent various interferon (IFN) sequences used for
CC alignment studies with the human IFN-beta2 polypeptide
XX
SQ Sequence 189 AA;

Query Match 100.0%; Score 978; DB 5; Length 189;
Best Local Similarity 100.0%; Pred. No. 1.7e-89;
Matches 189; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
```

```
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
                 |||||||||
Db        181 LQERLRRKE 189
```

RESULT 4
ABP70735
ID ABP70735 standard; protein; 189 AA.
XX
AC ABP70735;
XX
DT 25-APR-2003 (first entry)
XX
DE Human interferon alpha 5.
XX
KW Human; antiviral; cytostatic; nootropic; neuroprotective;
KW immunosuppressive; antiasthmatic; anti-HIV; anti-inflammatory;
KW interferon alpha 5; IFNalpha-5; cancer; cardiovascular disorder;
KW metabolic disease; infectious disease; pneumonia; ulcerative colitis;
KW central nervous system disorder; AIDS; Alzheimer's disease;
KW schizophrenia; depression; graft rejection; anaemia; allergy; asthma;
KW multiple sclerosis; osteoporosis; psoriasis; rheumatoid arthritis;
KW Crohn's disease; autoimmune disease; wound healing; Kaposi's sarcoma;
KW gastrointestinal disorder; leukaemia; Parkinson's disease;
KW cell signalling.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Peptide 1. .23
FT /label= Signal_peptide
FT Protein 24. .189
FT /label= Mature_peptide
XX
PN FR2824333-A1.
XX
PD 08-NOV-2002.
XX
PF 03-MAY-2001; 2001FR-00005919.
XX
PR 03-MAY-2001; 2001FR-00005919.
XX
PA (GENO-) GENODYSSEE SA.
XX
PI Escary JL;
XX
DR WPI; 2003-142460/14.
DR N-PSDB; ABZ70351.
XX
PT New interferon alpha 5 polynucleotides containing single nucleotide
PT polymorphisms are useful to prevent and treat a variety of disorders and
PT diseases including cancer and immune disorders.
XX
PS Claim 17; Page 65-66; 69pp; French.
XX
CC The present sequence is the protein sequence for human interferon alpha 5
CC (IFNalpha-5). The coding sequence for this protein has the single
CC nucleotide polymorphisms (SNPs) c641g and/or g798c. The coding sequence
CC is useful for preventing or treating cancer, cardiovascular or metabolic
CC disease not related to the immune system or obesity, infectious disease
CC particularly viral, pneumonia, ulcerative colitis, disease of the central
CC nervous system, AIDS, Alzheimer's disease, schizophrenia, depression,
CC graft rejection, anaemia, particularly in dialysis patients, allergies,
CC asthma, multiple sclerosis, osteoporosis, psoriasis, rheumatoid
CC arthritis, Crohn's disease, autoimmune diseases and disorders, wound
CC healing, gastrointestinal disorders, genital or venereal warts, or
CC disorders arising from chemotherapy. A particular use is to prevent or
CC treat leukaemia such as chronic myeloid leukaemia, multiple myelomas,
CC follicular lymphomas, malignant melanomas, renal carcinomas metastases,
CC Alzheimer's disease, Parkinson's disease and tumours which arise due to
CC an immune system deficiency, particularly Kaposi's sarcoma in AIDS
XX
SQ Sequence 189 AA;

Query Match 100.0%; Score 978; DB 6; Length 189;
Best Local Similarity 100.0%; Pred. No. 1.7e-89;
Matches 189; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189
```

RESULT 5
ADN10804
ID ADN10804 standard; protein; 189 AA.
XX
AC ADN10804;
XX
DT 01-JUL-2004 (first entry)
XX
DE Human interferon-alpha 5.
XX
KW Human; interferon-alpha 5; protein engineering; virucide;
KW immunosuppressive; cytostatic; antiinflammatory.
XX
OS Homo sapiens.
XX
PN WO2004031352-A2.
XX
PD 15-APR-2004.
XX
PF 30-SEP-2003; 2003WO-US030802.
XX
PR 01-OCT-2002; 2002US-0415541P.
PR 10-JUN-2003; 2003US-0477246P.
PR 24-JUL-2003; 2003US-0489725P.
XX
PA (XENC-) XENCOR.
XX
PI Aguinaldo AM, Beyna AJ, Desjarlais JR, Marshall SA, Muchhal U;
PI Villegas MFA, Zhukovsky E, Cho HS;
XX
DR WPI; 2004-330165/30.
DR GENBANK; 10835103.
XX
PT New variant type I Interferon protein exhibiting improved solubility
PT relative to a wild type interferon protein, useful for treating
PT autoimmune diseases, viral infections, inflammatory diseases or cancer.
XX
PS Claim 1; SEQ ID NO 5; 75pp; English.
XX
CC The present sequence is that of human interferon-alpha 5. The invention

```
CC   relates to interferon variants with improved properties, such as
CC   increased solubility, increased specific activity and decreased
CC   immunogenicity. Various strategies may be used to design such variants,
CC   including substituting solvent-exposed hydrophobic residues with polar
CC   residues, modifying residues that affect the isoelectric point of the
CC   protein, and reducing the occurrence of unwanted protein-protein
CC   interactions by modifying residues located at a dimer interface. Variant
CC   type I interferon proteins ADN10818-ADN10829 that exhibit improved
CC   solubility relative to wild-type interferons ADN10800-ADN10817 are
CC   claimed. The variants maintain the immunomodulatory, antiviral and/or
CC   antineoplastic activities of the native protein. They differ from the
CC   native interferon by at least one substitution of a solvent-exposed
CC   hydrophobic residue. The variants can be obtained by recombinant
CC   expression in host cells. They are useful for treating autoimmune
CC   diseases, viral infections, inflammatory diseases or cancer. Wild-type
CC   interferons, including the present sequence, are used in a claimed method
CC   of inhibiting interferon dimer formation.
XX
SQ   Sequence 189 AA;

  Query Match             100.0%;  Score 978;  DB 8;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 1.7e-89;
  Matches  189;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 6
ADS16314
ID   ADS16314 standard; protein; 189 AA.
XX
AC   ADS16314;
XX
DT   02-DEC-2004  (first entry)
XX
DE   Human interferon (IFN) alpha 5 protein.
XX
KW   Interferon; IFN; antiviral; antineoplastic; immunomodulator;
KW   IFN related disorder; autoimmune disease; multiple sclerosis;
KW   diabetes mellitus; lupus erythematosus; Crohn's disease; asthma; allergy;
KW   psoriasis; viral infection; hepatitis C; hepatitis B; viral encephalitis;
KW   cell proliferation disease; cancer; osteosarcoma; basal cell carcinoma;
KW   multiple myeloma; chronic lymphocytic leukaemia; Kaposi's sarcoma;
KW   renal-cell carcinoma; ovarian cancer; hairy-cell leukaemia;
KW   Hodgkin's disease; gene therapy; human; IFN alpha 5.
XX
OS   Homo sapiens.
XX
PN   US2004175359-A1.
XX
PD   09-SEP-2004.
XX
PF   30-SEP-2003; 2003US-00677093.
XX
PR   12-NOV-2002; 2002US-0425851P.
XX
PA   (DESJ/) DESJARLAIS J R.
PA   (MARS/) MARSHALL S A.
PA   (MOYY/) MO Y.
PA   (THOM/) THOMASON A R.
XX
PI   Desjarlais JR,  Marshall SA,  Mo Y,  Thomason AR;
XX
DR   WPI; 2004-642104/62.
DR   GENBANK; 4504597.
XX
PT   Novel type 1 interferon (IFN) having antiviral, antineoplastic or
PT   immunomodulatory activity same as wild-type IFN, and being circularly
PT   permuted or cyclized to provide modulated characteristics, useful for
PT   treating IFN related diseases.
XX
PS   Disclosure; SEQ ID NO 5; 48pp; English.
XX
CC   The present invention relates to a type 1 interferon (IFN) comprising
CC   antiviral, antineoplastic and immunomodulatory activity similar to a
CC   naturally occurring IFN and has been circularly permuted or cyclised and
CC   has at least one modulated characteristic as compared to the naturally
CC   occurring IFN. The invention is useful for treating IFN related disorder
CC   which includes autoimmune diseases such as multiple sclerosis, diabetes
CC   mellitus, lupus erythematosus, Crohn's disease, asthma, allergies and
CC   psoriasis, viral infections such as hepatitis C, hepatitis B and viral
CC   encephalitis and cell proliferation diseases or cancer such as
CC   osteosarcoma, basal cell carcinoma, multiple myeloma, chronic lymphocytic
CC   leukaemia, Kaposi's sarcoma, renal-cell carcinoma, ovarian cancer, hairy-
CC   cell leukaemia and Hodgkin's disease. The invention is also useful in
CC   gene therapy. The present sequence is human interferon (IFN) protein.
XX
SQ   Sequence 189 AA;

  Query Match             100.0%;  Score 978;  DB 8;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 1.7e-89;
  Matches  189;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 7
ADW02275
ID   ADW02275 standard; protein; 189 AA.
XX
AC   ADW02275;
XX
DT   07-APR-2005  (first entry)
XX
DE   Human interferon alpha 5.
XX
KW   interferon alpha; interferon; IFN-alpha; neuroprotective;
KW   antiinflammatory; hepatotropic; virucide; cytostatic; gene therapy;
KW   multiple sclerosis; viral hepatitis; cancer.
XX
OS   Homo sapiens.
XX
PN   WO2005003157-A2.
XX
PD   13-JAN-2005.
XX
PF   30-MAR-2004; 2004WO-US009824.
XX
```

PR 10-JUN-2003; 2003US-0477246P.
PR 24-JUL-2003; 2003US-0489725P.
PR 30-SEP-2003; 2003US-00676705.
PR 30-SEP-2003; 2003WO-US030802.
XX
PA (XENC-) XENCOR.
XX
PI Aguinaldo AM, Beyna AJ, Cho HS, Desjarlais JR, Marshall SA;
PI Muchhal U, Villegas MFA, Zhukovsky E, Quesenberry MS;
XX
DR WPI; 2005-091765/10.
XX
PT New variant type 1 Interferon (IFN)-beta, alpha or kappa proteins
PT exhibiting modified immunogenicity, useful for treating IFN-responsive
PT diseases such as multiple sclerosis, viral hepatitis or cancer.
XX
PS Disclosure; Fig 1; 112pp; English.
XX
CC This invention describes a novel variant type 1 interferon (IFN)-beta,
CC alpha or kappa protein exhibiting modified immunogenicity as compared to
CC a wild type protein. The variant type 1 IFN-beta exhibits modified
CC immunogenicity if there is at least one modification at a position
CC selected from 1, 2, 3, 4, 5, 6, 8, 9, 12, 15, 16, 22, 28, 30, 32, 36, 42,
CC 43, 46, 47, 48, 49, 51, 92, 93, 96, 100, 101, 104, 111, 113, 116, 117,
CC 120, 121, 124, 130, 148, and 155. The variant type 1 IFN-alpha protein
CC comprises at least one modification at position 16, 27, 30, 89, 100, 110,
CC 111, 117, 128 or 161. The variant type 1 IFN-kappa protein comprises at
CC least one modification at position 1, 5, 8, 15, 18, 28, 30, 33, 37, 46,
CC 48, 52, 65, 68, 76, 79, 89, 97, 112, 115, 120, 127, 133, 151, 161, 168 or
CC 171. The variant proteins are used in a method for treating an interferon
CC -responsive disorder and for methods of modulating immunogenicity of IFN.
CC The variant protein demonstrates reduced binding to at least one human
CC class II MHC allele. The products of the invention have neuroprotective,
CC antiinflammatory, hepatotropic, virucide and cytostatic activity and can
CC be used for gene therapy. The composition and methods are useful for
CC treating interferon-responsive diseases such as multiple sclerosis, viral
CC hepatitis or cancer. This sequence represents a human type I interferon
CC alpha protein used in the method of the invention.
XX
SQ Sequence 189 AA;

Query Match 100.0%; Score 978; DB 9; Length 189;
Best Local Similarity 100.0%; Pred. No. 1.7e-89;
Matches 189; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
Db 1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy 61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
Db 61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy 121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
Db 121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy 181 LQERLRRKE 189
Db 181 LQERLRRKE 189

RESULT 8
ADZ26753
ID ADZ26753 standard; protein; 189 AA.
XX
AC ADZ26753;
XX
DT 16-JUN-2005 (first entry)
XX
DE Human IFNalpha5.
XX
KW cell culture; stem cell; IFNalpha5.
XX
OS Homo sapiens.
XX
PN WO2005030999-A1.
XX
PD 07-APR-2005.
XX
PF 24-SEP-2004; 2004WO-US031524.
XX
PR 25-SEP-2003; 2003US-0506221P.
PR 08-OCT-2003; 2003US-0509594P.
XX
PA (DAND) DANA FARBER CANCER INST INC.
XX
PI Ritz J, Wu CJ;
XX
DR WPI; 2005-273394/28.
DR N-PSDB; ADZ26752.
XX
PT Detecting lineage-specific cells in a biological sample, useful for
PT determining the clinical outcome of a progenitor cell transfer in a
PT subject, comprises identifying lineage-specific mRNA in the sample.
XX
PS Disclosure; SEQ ID NO 379; 393pp; English.
XX
CC The invention relates to a method of detecting lineage-specific cells in
CC a biological sample which comprises identifying lineage-specific mRNA in
CC the sample. The methods are useful for determining the clinical outcome
CC of a progenitor cell transfer in a subject, and for identifying or
CC quantifying lineage-specific cells. The present sequence represents the
CC amino acid sequence of a human protein used to identify lineage-specific
CC cells.
XX
SQ Sequence 189 AA;

Query Match 100.0%; Score 978; DB 9; Length 189;
Best Local Similarity 100.0%; Pred. No. 1.7e-89;
Matches 189; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
Db 1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy 61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
Db 61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy 121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
Db 121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy 181 LQERLRRKE 189
Db 181 LQERLRRKE 189

RESULT 9
ABP70736
ID ABP70736 standard; protein; 189 AA.
XX
AC ABP70736;
XX
DT 25-APR-2003 (first entry)
XX
DE Human interferon alpha 5 variant #1.
XX
KW Human; antiviral; cytostatic; nootropic; neuroprotective;
KW immunosuppressive; antiasthmatic; anti-HIV; anti-inflammatory;
KW interferon alpha 5; IFNalpha-5; cancer; cardiovascular disorder;
KW metabolic disease; infectious disease; pneumonia; ulcerative colitis;
KW central nervous system disorder; AIDS; Alzheimer's disease;
KW schizophrenia; depression; graft rejection; anaemia; allergy; asthma;
KW multiple sclerosis; osteoporosis; psoriasis; rheumatoid arthritis;

```
KW   Crohn's disease; autoimmune disease; wound healing; Kaposi's sarcoma;
KW   gastrointestinal disorder; leukaemia; Parkinson's disease;
KW   cell signalling.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 70
FT                   /note= "Gln substituted with Glu"
XX
PN   FR2824333-A1.
XX
PD   08-NOV-2002.
XX
PF   03-MAY-2001; 2001FR-00005919.
XX
PR   03-MAY-2001; 2001FR-00005919.
XX
PA   (GENO-) GENODYSSEE SA.
XX
PI   Escary JL;
XX
DR   WPI; 2003-142460/14.
XX
PT   New interferon alpha 5 polynucleotides containing single nucleotide
PT   polymorphisms are useful to prevent and treat a variety of disorders and
PT   diseases including cancer and immune disorders.
XX
PS   Claim 17; Page; 69pp; French.
XX
CC   The present invention relates to human interferon alpha 5 (IFNalpha-5)
CC   coding sequence (see ABZ70351). The coding sequence has the single
CC   nucleotide polymorphisms (SNPs) c641g and/or g798c. The coding sequence
CC   is useful for preventing or treating cancer, cardiovascular or metabolic
CC   disease not related to the immune system or obesity, infectious disease
CC   particularly viral, pneumonia, ulcerative colitis, disease of the central
CC   nervous system, AIDS, Alzheimer's disease, schizophrenia, depression,
CC   graft rejection, anaemia, particularly in dialysis patients, allergies,
CC   asthma, multiple sclerosis, osteoporosis, psoriasis, rheumatoid
CC   arthritis, Crohn's disease, autoimmune diseases and disorders, wound
CC   healing, gastrointestinal disorders, genital or venereal warts, or
CC   disorders arising from chemotherapy. A particular use is to prevent or
CC   treat leukaemia such as chronic myeloid leukaemia, multiple myelomas,
CC   follicular lymphomas, malignant melanomas, renal carcinomas metastases,
CC   Alzheimer's disease, Parkinson's disease and tumours which arise due to
CC   an immune system deficiency, particularly Kaposi's sarcoma in AIDS. The
CC   present sequence is a IFNalpha-5 variant. This protein is encoded by the
CC   IFNalpha-5 coding sequence with the c641g SNP. Note: The present sequence
CC   is not shown in the specification, but is derived from information given
XX
SQ   Sequence 189 AA;

  Query Match             99.7%;  Score 975;  DB 6;  Length 189;
  Best Local Similarity   99.5%;  Pred. No. 3.5e-89;
  Matches  188;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||||||:|||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNEFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189
```

```
RESULT 10
AAP30230
ID   AAP30230 standard; protein; 189 AA.
XX
AC   AAP30230;
XX
DT   25-MAR-2003  (revised)
DT   25-MAY-1992  (first entry)
XX
DE   Sequence of interferon IFN-alpha-61.
XX
KW   Antiviral; cell growth regulator; cancer; tumour; therapy.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1. .23
FT                   /label= signal
FT   Protein         24. .189
FT                   /label= Claim 1
XX
PN   WO8302459-A.
XX
PD   21-JUL-1983.
XX
PF   15-JAN-1982;   82US-00339825.
XX
PR   15-JAN-1982;   82US-00339825.
PR   02-SEP-1982;   82US-00414054.
XX
PA   (CETU ) CETUS CORP.
PA   (CETU ) CETUS CORP.
XX
PI   Innis MA;
XX
DR   WPI; 1983-723184/30.
DR   N-PSDB; AAN30163.
XX
PT   Interferon-alpha 61 - useful as antiviral and cell growth regulatory
PT   agent.
XX
PS   Disclosure; Fig 5; 28pp; English.
XX
CC   The inventors claim IFN-alpha-61 and DNA encoding it (see AAN30163,
CC   AAP30230). IFN-alpha-74 is made by identifying and isolating the gene by
CC   screening a library of human genomic DNA with an approp. IFN- alpha DNA
CC   probe. It is useful as antiviral and cell growth regulatory agent. Dose
CC   is 10(4)-10(7) i.u. . (Updated on 25-MAR-2003 to correct PA field.)
XX
SQ   Sequence 189 AA;

  Query Match             99.6%;  Score 974;  DB 1;  Length 189;
  Best Local Similarity   99.5%;  Pred. No. 4.4e-89;
  Matches  188;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||||||||||:|||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEETPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189
```

RESULT 11

```
ABP70737
ID   ABP70737 standard; protein; 189 AA.
XX
AC   ABP70737;
XX
DT   25-APR-2003  (first entry)
XX
DE   Human interferon alpha 5 variant #2.
XX
KW   Human; antiviral; cytostatic; nootropic; neuroprotective;
KW   immunosuppressive; antiasthmatic; anti-HIV; anti-inflammatory;
KW   interferon alpha 5; IFNalpha-5; cancer; cardiovascular disorder;
KW   metabolic disease; infectious disease; pneumonia; ulcerative colitis;
KW   central nervous system disorder; AIDS; Alzheimer's disease;
KW   schizophrenia; depression; graft rejection; anaemia; allergy; asthma;
KW   multiple sclerosis; osteoporosis; psoriasis; rheumatoid arthritis;
KW   Crohn's disease; autoimmune disease; wound healing; Kaposi's sarcoma;
KW   gastrointestinal disorder; leukaemia; Parkinson's disease;
KW   cell signalling.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Misc-difference 122
FT                   /note= "Cys substituted with Ser"
XX
PN   FR2824333-A1.
XX
PD   08-NOV-2002.
XX
PF   03-MAY-2001; 2001FR-00005919.
XX
PR   03-MAY-2001; 2001FR-00005919.
XX
PA   (GENO-) GENODYSSEE SA.
XX
PI   Escary JL;
XX
DR   WPI; 2003-142460/14.
XX
PT   New interferon alpha 5 polynucleotides containing single nucleotide
PT   polymorphisms are useful to prevent and treat a variety of disorders and
PT   diseases including cancer and immune disorders.
XX
PS   Claim 17; Page; 69pp; French.
XX
CC   The present invention relates to human interferon alpha 5 (IFNalpha-5)
CC   coding sequence (see ABZ70351). The coding sequence has the single
CC   nucleotide polymorphisms (SNPs) c641g and/or g798c. The coding sequence
CC   is useful for preventing or treating cancer, cardiovascular or metabolic
CC   disease not related to the immune system or obesity, infectious disease
CC   particularly viral, pneumonia, ulcerative colitis, disease of the central
CC   nervous system, AIDS, Alzheimer's disease, schizophrenia, depression,
CC   graft rejection, anaemia, particularly in dialysis patients, allergies,
CC   asthma, multiple sclerosis, osteoporosis, psoriasis, rheumatoid
CC   arthritis, Crohn's disease, autoimmune diseases and disorders, wound
CC   healing, gastrointestinal disorders, genital or venereal warts, or
CC   disorders arising from chemotherapy. A particular use is to prevent or
CC   treat leukaemia such as chronic myeloid leukaemia, multiple myelomas,
CC   follicular lymphomas, malignant melanomas, renal carcinomas metastases,
CC   Alzheimer's disease, Parkinson's disease and tumours which arise due to
CC   an immune system deficiency, particularly Kaposi's sarcoma in AIDS. The
CC   present sequence is a IFNalpha-5 variant. This protein is encoded by the
CC   IFNalpha-5 coding sequence with the g798c SNP. Note: The present sequence
CC   is not shown in the specification, but is derived from information given
XX
SQ   Sequence 189 AA;

  Query Match             99.0%;  Score 968;  DB 6;  Length 189;
  Best Local Similarity   99.5%;  Pred. No. 1.7e-88;
  Matches  188;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ASMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 12
AAP30003
ID   AAP30003 standard; protein; 182 AA.
XX
AC   AAP30003;
XX
DT   25-MAR-2003  (revised)
DT   31-MAY-1992  (first entry)
XX
DE   Sequence of human alpha-interferon (alpha-IFN) Gx-1.
XX
KW   Antiviral; antitumour; anticancer; immunomodulator.
XX
OS   Homo sapiens.
XX
PN   EP89692-A.
XX
PD   28-SEP-1983.
XX
PF   23-MAR-1983;   83EP-00102893.
XX
PR   23-MAR-1982;   82US-00361364.
PR   24-APR-1984;   84US-00602275.
XX
PA   (BRIM ) BRISTOL-MYERS CO.
XX
PI   Sloma A;
XX
DR   WPI; 1983-778408/40.
DR   N-PSDB; AAN30004.
XX
PT   Antiviral alpha-interferon Gx-1 - prodn. from plasmid transformed
PT   Escherichia coli ATCC 39063.
XX
PS   Claim 23; Page 34-36; 41pp; English.
XX
CC   The inventors claim a human alpha-IFN Gx-1 gene and the polypeptide
CC   encoded by it. They also claim a plasmid, a microorganism transformed by
CC   it and the production of human alpha-IFN by recombinant methods. The
CC   microoorganisms is pref. Escherichia. The initiation sequences may be
CC   derived from the lac or trp operon of E. coli. (Updated on 25-MAR-2003 to
CC   correct PA field.)
XX
SQ   Sequence 182 AA;

  Query Match             92.7%;  Score 907;  DB 1;  Length 182;
  Best Local Similarity   95.6%;  Pred. No. 2.1e-82;
  Matches  174;  Conservative    6;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          8 LMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFD 67
              :||||||:||| |||||:| |||||:||||||||||||||||||||||||||||||||||
Db          1 MMALVVLSCKSSCSLGCNLSQTHSLNNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFD 60

Qy         68 GNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEV 127
              ||||||||||||||||||||||||||||:||||||||||||||||||:|||||||
Db         61 GNQFQKAQAISVLHEMIQQTFNLFSTKDSSASWDETLLDKFYTELYQQLNDLKACMMQEV 120
```

```
Qy        128 GVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRR 187
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRR 180

Qy        188 KE 189
              ||
Db        181 KE 182
```

```
RESULT 13
AEC01739
ID   AEC01739 standard; protein; 280 AA.
XX
AC   AEC01739;
XX
DT   20-OCT-2005  (first entry)
XX
DE   IFN-IGAG-GPI anchor protein.
XX
KW   pLenti6 vector; protein C; screening; protein expression. .
XX
OS   Homo sapiens.
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Protein         1. .220
FT                   /label= IFN
FT   Misc-difference 221
FT                   /note= "Read through stop codon"
FT   Peptide         222. .280
FT                   /label= GPI anchor
XX
PN   WO2005073375-A1.
XX
PD   11-AUG-2005.
XX
PF   28-JAN-2005; 2005WO-DK000070.
XX
PR   30-JAN-2004; 2004US-0540820P.
PR   29-NOV-2004; 2004US-0631306P.
XX
PA   (MAXY-) MAXYGEN HOLDINGS LTD.
PA   (MAXY-) MAXYGEN APS.
XX
PI   Bouquin T;
XX
DR   WPI; 2005-555697/56.
DR   N-PSDB; AEC01713.
XX
PT   Screening or selecting cells expressing a desired level of a polypeptide
PT   using cells each with an expression cassette having a first
PT   polynucleotide, useful for producing and evaluating soluble or membrane-
PT   bound protein expression.
XX
PS   Example 4; Fig 18; 84pp; English.
XX
CC   This sequence is encoded by the IFN-UGAG-GPI cassette and includes the
CC   native interferon peptide and the GPI anchor sequence. This cassette was
CC   used in the construction of a vector used in the method of the invention
CC   for screening or selecting cells expressing a desired level of a
CC   polypeptide. The method comprises providing cells each having an
CC   expression cassette with a first polynucleotide encoding the polypeptide,
CC   at least one stop codon downstream of the first polynucleotide, and a
CC   second polynucleotide encoding a cell membrane anchoring peptide, a
CC   reporter peptide or an epitope tag downstream of the stop codon. The
CC   method comprises cultivating the cells in the presence of a termination
CC   suppression agent to allow expression of a fusion protein comprising the
CC   recombinant polypeptide and the cell membrane anchoring peptide, reporter
CC   peptide or epitope tag, and sorting the cells to select at least one cell
CC   expressing the fusion protein at a desired level and/or with a desired
CC   uniformity. The methods and compositions of the present invention are
CC   useful for selectively suppressing stop codons during protein
CC   translation, alternatively producing soluble or membrane-bound proteins
CC   from the same cell, selecting cell clones or cells, and evaluating
CC   protein expression.
XX
SQ   Sequence 280 AA;

  Query Match             90.0%;  Score 880;  DB 9;  Length 280;
  Best Local Similarity   88.9%;  Pred. No. 1.8e-79;
  Matches  168;  Conservative   12;  Mismatches    9;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||| |||||||:|||||||||||||||| ||| |:::|||||||||||||||||||
Db          1 MALPFALLMALVVLSCKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||:::||:|| ||| |||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:|||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 FQERLRRKE 189
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RESULT 14
AAP60304
ID   AAP60304 standard; protein; 166 AA.
XX
AC   AAP60304;
XX
DT   25-MAR-2003  (revised)
DT   23-AUG-1991  (first entry)
XX
DE   Sequence of interferon (IFN) alpha S51B10.
XX
KW   Antiviral; antitumour.
XX
OS   Homo sapiens.
XX
PN   EP173887-A.
XX
PD   12-MAR-1986.
XX
PF   10-AUG-1985;   85EP-00110061.
XX
PR   27-AUG-1984;   84JP-00179105.
XX
PA   (SHIO ) SHIONOGI & CO LTD.
XX
PI   Teraoka H,  Sato K,  Tanaka K;
XX
DR   WPI; 1986-070431/11.
DR   N-PSDB; AAN60236.
XX
PT   New interferon alpha S51B10 and alpha S17H9 - prepd. by DNA recombinant
PT   techniques.
XX
PS   Claim 1; Fig 2; 37pp; English.
XX
CC   IFN alpha-S51B10 and IFN alpha-S17H9 have antiviral and antitumour
CC   activities. Dosage is 1,000,000 - 10,000,000 units per day. IFNs are
CC   prepared from Ball-1 cells induced with Sendai virus by known recombinant
CC   DNA techniques. (Updated on 25-MAR-2003 to correct PA field.)
XX
SQ   Sequence 166 AA;

  Query Match             88.3%;  Score 864;  DB 1;  Length 166;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-78;
  Matches  166;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
```

```
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
                 |||||||||||||||||||||||||||||||||||||||||||||
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 166


RESULT 15
AAR67761
ID   AAR67761 standard; protein; 166 AA.
XX
AC   AAR67761;
XX
DT   25-MAR-2003  (revised)
DT   03-AUG-1995  (first entry)
XX
DE   Interferon-alpha-61.
XX
KW   Interferon-alpha-61; IFN-alpha-61; antitumor; virucide; immunostimulant;
KW   CHO; Chinese hamster ovary; recombinant interferon.
XX
OS   Homo sapiens.
XX
PN   US5376567-A.
XX
PD   27-DEC-1994.
XX
PF   09-JAN-1992;   92US-00819626.
XX
PR   01-NOV-1982;   82US-00438991.
PR   31-JUL-1985;   85US-00761180.
PR   29-JUN-1990;   90US-00546519.
XX
PA   (BERL-) BERLEX LAB INC.
PA   (STRD ) UNIV LELAND STANFORD JUNIOR.
XX
PI   Innis MA,  Ringold GM,  Mccormick FP;
XX
DR   WPI; 1995-043473/06.
DR   N-PSDB; AAQ80940.
XX
PT   Recombinant prodn. of human interferon - using a construct comprising a
PT   human interferon gene and a dihydrofolate reductase gene in CHO cells.
XX
PS   Disclosure; Col 6; 36pp; English.
XX
CC   DNA encoding interferon-alpha-61 mature protein was isolated from a fetal
CC   human genomic DNA library. The DNA sequence (AAQ80940) and predicted
CC   protein sequence (AAR67761) of IFN-alpha-61 differ substantially from
CC   those of other known IFN-alpha sequences. Recombinant IFN-alpha-61,
CC   produced in Escherichia coli MM294, had virucide, immunostimulant and
CC   antitumor activities. (Updated on 25-MAR-2003 to correct PF field.)
XX
SQ   Sequence 166 AA;

  Query Match             88.3%;  Score 864;  DB 2;  Length 166;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-78;
  Matches  166;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
                 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
                 ||||||||||||||||||||||||||||||||||||||||||||
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 166


Search completed: December 15, 2005, 12:57:56
Job time : 191 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: December 15, 2005, 12:54:49 ; Search time 166 Seconds
(without alignments)
475.721 Million cell updates/sec

Title: US-10-698-402-2
Perfect score: 978
Sequence: 1 MALPFVLLMALVVLNCKSIC.....EIMRSFSLSANLQERLRRKE 189

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1867569 seqs, 417829326 residues

Total number of hits satisfying chosen parameters: 1867569

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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2: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
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4: /cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	978	100.0	189	3	US-09-881-050-21	Sequence 21, Appl
2	978	100.0	189	4	US-10-676-705-5	Sequence 5, Appli
3	978	100.0	189	4	US-10-698-402-2	Sequence 2, Appli
4	978	100.0	189	4	US-10-677-093-5	Sequence 5, Appli
5	978	100.0	189	5	US-10-820-467-5	Sequence 5, Appli
6	864	88.3	166	3	US-09-977-034-11	Sequence 11, Appl
7	864	88.3	166	4	US-10-658-834A-187	Sequence 187, App
8	864	88.3	166	5	US-10-714-817-34	Sequence 34, Appl
9	864	88.3	166	5	US-10-953-259-11	Sequence 11, Appl
10	864	88.3	166	5	US-10-820-467-35	Sequence 35, Appl
11	852	87.1	189	4	US-10-415-969-62	Sequence 62, Appl
12	852	87.1	189	4	US-10-415-969-72	Sequence 72, Appl
13	851	87.0	189	3	US-09-881-050-23	Sequence 23, Appl
14	851	87.0	189	3	US-09-881-050-26	Sequence 26, Appl
15	851	87.0	189	3	US-09-919-497-73	Sequence 73, Appl
16	851	87.0	189	4	US-10-673-886A-2	Sequence 2, Appli
17	851	87.0	189	4	US-10-676-705-11	Sequence 11, Appl
18	851	87.0	189	4	US-10-676-705-14	Sequence 14, Appl
19	851	87.0	189	4	US-10-677-093-11	Sequence 11, Appl
20	851	87.0	189	4	US-10-677-093-14	Sequence 14, Appl
21	851	87.0	189	5	US-10-820-467-11	Sequence 11, Appl
22	851	87.0	189	5	US-10-820-467-14	Sequence 14, Appl
23	845	86.4	189	4	US-10-415-969-64	Sequence 64, Appl
24	845	86.4	189	4	US-10-718-733A-2	Sequence 2, Appli
25	844	86.3	166	4	US-10-389-674-81	Sequence 81, Appl
26	840	85.9	189	4	US-10-415-969-58	Sequence 58, Appl
27	839	85.8	189	4	US-10-415-969-60	Sequence 60, Appl
28	838	85.7	189	3	US-09-881-050-20	Sequence 20, Appl
29	838	85.7	189	4	US-10-676-705-6	Sequence 6, Appli
30	838	85.7	189	4	US-10-677-093-6	Sequence 6, Appli
31	838	85.7	189	5	US-10-820-467-6	Sequence 6, Appli
32	832	85.1	189	3	US-09-881-050-22	Sequence 22, Appl
33	832	85.1	189	3	US-09-908-193-29	Sequence 29, Appl
34	832	85.1	189	4	US-10-676-705-10	Sequence 10, Appl
35	832	85.1	189	4	US-10-677-093-10	Sequence 10, Appl
36	832	85.1	189	5	US-10-820-467-10	Sequence 10, Appl
37	830	84.9	189	4	US-10-415-969-50	Sequence 50, Appl
38	830	84.9	189	4	US-10-676-705-4	Sequence 4, Appli
39	830	84.9	189	4	US-10-677-093-4	Sequence 4, Appli
40	830	84.9	189	5	US-10-820-467-4	Sequence 4, Appli
41	829	84.8	181	5	US-10-688-845-69	Sequence 69, Appl
42	828	84.7	189	3	US-09-881-050-27	Sequence 27, Appl
43	828	84.7	189	3	US-09-908-193-30	Sequence 30, Appl
44	828	84.7	189	4	US-10-676-705-1	Sequence 1, Appli
45	828	84.7	189	4	US-10-677-093-1	Sequence 1, Appli

ALIGNMENTS

RESULT 1
US-09-881-050-21
; Sequence 21, Application US/09881050
; Publication No. US20020025304A1
; GENERAL INFORMATION:
; APPLICANT: CROZE, EDWARD M.
; APPLICANT: FAULDS, DARYL
; APPLICANT: WAGNER, T. CHARIS
; TITLE OF INVENTION: NOVEL INTERFERON FOR THE TREATMENT OF MULTIPLE
; TITLE OF INVENTION: SCLEROSIS
; FILE REFERENCE: BERLX-88
; CURRENT APPLICATION NUMBER: US/09/881,050
; CURRENT FILING DATE: 2001-06-15
; PRIOR APPLICATION NUMBER: 60/212,046
; PRIOR FILING DATE: 2000-06-16
; NUMBER OF SEQ ID NOS: 30
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 21
; LENGTH: 189
; TYPE: PRT
; ORGANISM: Unknown Organism
; FEATURE:
; OTHER INFORMATION: Description of Unknown Organism: IFNalpha5 amino
; OTHER INFORMATION: acid sequence
US-09-881-050-21

Query Match 100.0%; Score 978; DB 3; Length 189;
Best Local Similarity 100.0%; Pred. No. 9.9e-95;
Matches 189; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
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Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
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Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
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Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189
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RESULT 2
US-10-676-705-5
; Sequence 5, Application US/10676705

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; Publication No. US20040137581A1
; GENERAL INFORMATION:
;  APPLICANT: Aguinaldo, Anna Marie
;  APPLICANT:  Beyna, Amelia Joy
;  APPLICANT:  Cho, Ho Sung
;  APPLICANT:  Desjarlais, John Rudolph
;  APPLICANT:  Marshall, Shannon Alicia
;  APPLICANT:  Muchhal, Umesh
;  APPLICANT:  Villegas, Michael Francis Aquino
;  APPLICANT:  Zhukovsky, Eugene
;  TITLE OF INVENTION: INTERFERON VARIANTS WITH IMPROVED PROPERTIES
;  FILE REFERENCE: A-71431-3
;  CURRENT APPLICATION NUMBER: US/10/676,705
;  CURRENT FILING DATE:  2003-09-30
;  PRIOR APPLICATION NUMBER: US 60/489,725
;  PRIOR FILING DATE: 2003-07-24
;  PRIOR APPLICATION NUMBER: US 60/477,246
;  PRIOR FILING DATE: 2003-06-10
;  PRIOR APPLICATION NUMBER: US 60/415,541
;  PRIOR FILING DATE: 2002-10-01
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 5
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-676-705-5

  Query Match            100.0%;  Score 978;  DB 4;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 9.9e-95;
  Matches  189;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
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Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
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Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
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Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 3
US-10-698-402-2
; Sequence 2, Application US/10698402
; Publication No. US20040142431A1
; GENERAL INFORMATION:
;  APPLICANT: GENODYSSEE
;  TITLE OF INVENTION: New polynucleotides and polypeptides of the IFN alpha 5 gene
;  FILE REFERENCE: BIF 022984 EXTENSIONS
;  CURRENT APPLICATION NUMBER: US/10/698,402
;  CURRENT FILING DATE:  2003-11-03
;  PRIOR APPLICATION NUMBER: FR 0105919
;  PRIOR FILING DATE: 2001-05-03
;  NUMBER OF SEQ ID NOS: 12
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 2
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-698-402-2

  Query Match            100.0%;  Score 978;  DB 4;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 9.9e-95;
  Matches  189;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 4
US-10-677-093-5
; Sequence 5, Application US/10677093
; Publication No. US20040175359A1
; GENERAL INFORMATION:
;  APPLICANT: Desjarlais, John Rudolf
;  APPLICANT:  Marshall, Shannon Alicia
;  APPLICANT:  Mo, Yirong
;  APPLICANT:  Thomason, Adam Read
;  TITLE OF INVENTION: NOVEL PROTEINS WITH ANTIVIRAL, ANTINEOPLASTIC, AND/OR
;  TITLE OF INVENTION:  IMMUNOMODULATORY ACTIVITY
;  FILE REFERENCE: 33604/US/1
;  CURRENT APPLICATION NUMBER: US/10/677,093
;  CURRENT FILING DATE:  2003-09-30
;  PRIOR APPLICATION NUMBER: 60/425,851
;  PRIOR FILING DATE: 2002-11-12
;  NUMBER OF SEQ ID NOS: 54
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 5
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-677-093-5

  Query Match            100.0%;  Score 978;  DB 4;  Length 189;
  Best Local Similarity   100.0%;  Pred. No. 9.9e-95;
  Matches  189;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
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Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
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Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 5
US-10-820-467-5
; Sequence 5, Application US/10820467
; Publication No. US20050054053A1
; GENERAL INFORMATION:
;  APPLICANT: Aguinaldo, Anna Marie
;  APPLICANT:  Beyna, Amelia Joy
;  APPLICANT:  Cho, Ho Sung
;  APPLICANT:  Desjarlais, John Rudolph
;  APPLICANT:  Marshall, Shannon Alicia
;  APPLICANT:  Muchhal, Umesh
```

```
;  APPLICANT:  Villegas, Michael Francis Aquino
;  APPLICANT:  Zhukovsky, Eugene
;  APPLICANT:  Quesenberry, Michael Stephen
;  TITLE OF INVENTION: INTERFERON VARIANTS WITH IMIPROVED PROPERTIES
;  FILE REFERENCE: A-71431-4
;  CURRENT APPLICATION NUMBER: US/10/820,467
;  CURRENT FILING DATE:  2004-03-30
;  PRIOR APPLICATION NUMBER: US 60/477,246
;  PRIOR FILING DATE: 2003-06-10
;  PRIOR APPLICATION NUMBER: US 60/415,541
;  PRIOR FILING DATE: 2002-10-01
;  PRIOR APPLICATION NUMBER: US 60/489,725
;  PRIOR FILING DATE: 2003-07-24
;  PRIOR APPLICATION NUMBER: US 10/676,705
;  PRIOR FILING DATE: 2003-09-30
;  NUMBER OF SEQ ID NOS: 274
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 5
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-820-467-5

  Query Match           100.0%;  Score 978;  DB 5;  Length 189;
  Best Local Similarity  100.0%;  Pred. No. 9.9e-95;
  Matches  189;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 LQERLRRKE 189


RESULT 6
US-09-977-034-11
; Sequence 11, Application US/09977034
; Patent No. US20020081664A1
; GENERAL INFORMATION:
;  APPLICANT: Lo, Kin-Ming
;  APPLICANT:  Sun, Yaping
;  APPLICANT:  Gillies, Stephen D.
;  TITLE OF INVENTION: Expression and Export of Interferon-Alpha Proteins as
;  TITLE OF INVENTION:  Fc Fusion Proteins
;  FILE REFERENCE: LEX-009
;  CURRENT APPLICATION NUMBER: US/09/977,034
;  CURRENT FILING DATE:  2001-10-11
;  PRIOR APPLICATION NUMBER: US/09/575,503
;  PRIOR FILING DATE: 2000-05-19
;  PRIOR APPLICATION NUMBER: US 60/134,895
;  PRIOR FILING DATE: 1999-05-19
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 11
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   OTHER INFORMATION: Human IFN alpha-5 protein
US-09-977-034-11

  Query Match           88.3%;  Score 864;  DB 3;  Length 166;
  Best Local Similarity  100.0%;  Pred. No. 8.9e-83;
  Matches  166;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              |||||||||||||||||||||||||||||||||||||||||||||
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 166


RESULT 7
US-10-658-834A-187
; Sequence 187, Application US/10658834A
; Publication No. US20040132977A1
; GENERAL INFORMATION:
;  APPLICANT: Gantier, Rene
;  APPLICANT:  Guyon, Thierry
;  APPLICANT:  Drittanti, Lila
;  APPLICANT:  Vega, Manuel
;  TITLE OF INVENTION: Rational Evolution of Cytokines for Higher Stability, Encoding Nu
;  TITLE OF INVENTION:  Acid
;  TITLE OF INVENTION:  Molecules and Related Applications
;  FILE REFERENCE: 38751-922
;  CURRENT APPLICATION NUMBER: US/10/658,834A
;  CURRENT FILING DATE:  2003-09-08
;  PRIOR APPLICATION NUMBER: 60/457,135
;  PRIOR FILING DATE: 2003-03-21
;  PRIOR APPLICATION NUMBER: 60/409,898
;  PRIOR FILING DATE: 2002-09-09
;  NUMBER OF SEQ ID NOS: 1306
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 187
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;  PUBLICATION INFORMATION:
;   DATABASE ACCESSION NUMBER: Genbank CAA26702
;   DATABASE ENTRY DATE: 1995-03-30
US-10-658-834A-187

  Query Match           88.3%;  Score 864;  DB 4;  Length 166;
  Best Local Similarity  100.0%;  Pred. No. 8.9e-83;
  Matches  166;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              |||||||||||||||||||||||||||||||||||||||||||||
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 166


RESULT 8
US-10-714-817-34
; Sequence 34, Application US/10714817
; Publication No. US20040219131A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip A. et al.
;  TITLE OF INVENTION: Interferon-Alpha Polypeptides and Conjugates
;  FILE REFERENCE: 0269us310
;  CURRENT APPLICATION NUMBER: US/10/714,817
;  CURRENT FILING DATE:  2003-11-17
;  PRIOR APPLICATION NUMBER: US 60/502,560
```

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;  PRIOR FILING DATE: 2003-09-12
;  PRIOR APPLICATION NUMBER: US 60/427,612
;  PRIOR FILING DATE: 2002-11-18
;  NUMBER OF SEQ ID NOS: 104
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 34
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   OTHER INFORMATION: mature huIFN alpha-5
US-10-714-817-34

  Query Match             88.3%;  Score 864;  DB 5;  Length 166;
  Best Local Similarity   100.0%;  Pred. No. 8.9e-83;
  Matches  166;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              |||||||||||||||||||||||||||||||||||||||||||||
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 166


RESULT 9
US-10-953-259-11
; Sequence 11, Application US/10953259
; Publication No. US20050042729A1
; GENERAL INFORMATION:
;  APPLICANT: Lo, Kin-Ming
;  APPLICANT:  Sun, Yaping
;  APPLICANT:  Gillies, Stephen D.
;  TITLE OF INVENTION: Expression and Export of Interferon-Alpha Proteins as
;  TITLE OF INVENTION:  Fc Fusion Proteins
;  FILE REFERENCE: LEX-009DVC1
;  CURRENT APPLICATION NUMBER: US/10/953,259
;  CURRENT FILING DATE:  2004-09-29
;  PRIOR APPLICATION NUMBER: US 09/977,034
;  PRIOR FILING DATE: 2001-10-11
;  PRIOR APPLICATION NUMBER: US 09/575,503
;  PRIOR FILING DATE: 2000-05-19
;  PRIOR APPLICATION NUMBER: US 60/134,895
;  PRIOR FILING DATE: 1999-05-19
;  NUMBER OF SEQ ID NOS: 29
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 11
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Homo sapiens
;   FEATURE:
;   OTHER INFORMATION: Human IFN alpha-5 protein
US-10-953-259-11

  Query Match             88.3%;  Score 864;  DB 5;  Length 166;
  Best Local Similarity   100.0%;  Pred. No. 8.9e-83;
  Matches  166;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              |||||||||||||||||||||||||||||||||||||||||||||
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 166


RESULT 10
US-10-820-467-35
; Sequence 35, Application US/10820467
; Publication No. US20050054053A1
; GENERAL INFORMATION:
;  APPLICANT: Aguinaldo, Anna Marie
;  APPLICANT:  Beyna, Amelia Joy
;  APPLICANT:  Cho, Ho Sung
;  APPLICANT:  Desjarlais, John Rudolph
;  APPLICANT:  Marshall, Shannon Alicia
;  APPLICANT:  Muchhal, Umesh
;  APPLICANT:  Villegas, Michael Francis Aquino
;  APPLICANT:  Zhukovsky, Eugene
;  APPLICANT:  Quesenberry, Michael Stephen
;  TITLE OF INVENTION: INTERFERON VARIANTS WITH IMIPROVED PROPERTIES
;  FILE REFERENCE: A-71431-4
;  CURRENT APPLICATION NUMBER: US/10/820,467
;  CURRENT FILING DATE:  2004-03-30
;  PRIOR APPLICATION NUMBER: US 60/477,246
;  PRIOR FILING DATE: 2003-06-10
;  PRIOR APPLICATION NUMBER: US 60/415,541
;  PRIOR FILING DATE: 2002-10-01
;  PRIOR APPLICATION NUMBER: US 60/489,725
;  PRIOR FILING DATE: 2003-07-24
;  PRIOR APPLICATION NUMBER: US 10/676,705
;  PRIOR FILING DATE: 2003-09-30
;  NUMBER OF SEQ ID NOS: 274
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 35
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-820-467-35

  Query Match             88.3%;  Score 864;  DB 5;  Length 166;
  Best Local Similarity   100.0%;  Pred. No. 8.9e-83;
  Matches  166;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              |||||||||||||||||||||||||||||||||||||||||||||
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 166


RESULT 11
US-10-415-969-62
; Sequence 62, Application US/10415969
; Publication No. US20040105841A1
; GENERAL INFORMATION:
;  APPLICANT: PBL BIOMEDICAL LABORATORIES
;  TITLE OF INVENTION: INTERFERONS, USES AND COMPOSITIONS THERETO
;  FILE REFERENCE: PBLI-PWO-012
;  CURRENT APPLICATION NUMBER: US/10/415,969
;  CURRENT FILING DATE:  2003-05-02
;  PRIOR APPLICATION NUMBER: 60/245754
;  PRIOR FILING DATE: 2000-11-03
;  PRIOR APPLICATION NUMBER: 60/246234
;  PRIOR FILING DATE: 2000-11-03
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 62
;   LENGTH: 189
;   TYPE: PRT
```

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;   ORGANISM: Homo sapiens
US-10-415-969-62

  Query Match             87.1%;  Score 852;  DB 4;  Length 189;
  Best Local Similarity   86.8%;  Pred. No. 1.9e-81;
  Matches  164;  Conservative   14;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::||||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFPTELNQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:||||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 FQERLRRKE 189


RESULT 12
US-10-415-969-72
; Sequence 72, Application US/10415969
; Publication No. US20040105841A1
; GENERAL INFORMATION:
;  APPLICANT: PBL BIOMEDICAL LABORATORIES
;  TITLE OF INVENTION: INTERFERONS, USES AND COMPOSITIONS THERETO
;  FILE REFERENCE: PBLI-PWO-012
;  CURRENT APPLICATION NUMBER: US/10/415,969
;  CURRENT FILING DATE:  2003-05-02
;  PRIOR APPLICATION NUMBER: 60/245754
;  PRIOR FILING DATE: 2000-11-03
;  PRIOR APPLICATION NUMBER: 60/246234
;  PRIOR FILING DATE: 2000-11-03
;  NUMBER OF SEQ ID NOS: 86
;  SOFTWARE: PatentIn version 3.1
; SEQ ID NO 72
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-415-969-72

  Query Match             87.1%;  Score 852;  DB 4;  Length 189;
  Best Local Similarity   86.8%;  Pred. No. 1.9e-81;
  Matches  164;  Conservative   14;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::||||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFPTELNQQLNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:||||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 FQERLRRKE 189


RESULT 13
US-09-881-050-23
; Sequence 23, Application US/09881050
; Publication No. US20020025304A1
; GENERAL INFORMATION:
;  APPLICANT: CROZE, EDWARD M.
;  APPLICANT:  FAULDS, DARYL
;  APPLICANT:  WAGNER, T. CHARIS
;  TITLE OF INVENTION: NOVEL INTERFERON FOR THE TREATMENT OF MULTIPLE
;  TITLE OF INVENTION:  SCLEROSIS
;  FILE REFERENCE: BERLX-88
;  CURRENT APPLICATION NUMBER: US/09/881,050
;  CURRENT FILING DATE:  2001-06-15
;  PRIOR APPLICATION NUMBER: 60/212,046
;  PRIOR FILING DATE: 2000-06-16
;  NUMBER OF SEQ ID NOS: 30
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 23
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Unknown Organism
;   FEATURE:
;   OTHER INFORMATION: Description of Unknown Organism: IFNalpha21 amino
;   OTHER INFORMATION: acid sequence
US-09-881-050-23

  Query Match             87.0%;  Score 851;  DB 3;  Length 189;
  Best Local Similarity   86.2%;  Pred. No. 2.5e-81;
  Matches  163;  Conservative   15;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::||||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||:|
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDME 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||||| |:||||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              |||||||||
Db        181 FQERLRRKE 189


RESULT 14
US-09-881-050-26
; Sequence 26, Application US/09881050
; Publication No. US20020025304A1
; GENERAL INFORMATION:
;  APPLICANT: CROZE, EDWARD M.
;  APPLICANT:  FAULDS, DARYL
;  APPLICANT:  WAGNER, T. CHARIS
;  TITLE OF INVENTION: NOVEL INTERFERON FOR THE TREATMENT OF MULTIPLE
;  TITLE OF INVENTION:  SCLEROSIS
;  FILE REFERENCE: BERLX-88
;  CURRENT APPLICATION NUMBER: US/09/881,050
;  CURRENT FILING DATE:  2001-06-15
;  PRIOR APPLICATION NUMBER: 60/212,046
;  PRIOR FILING DATE: 2000-06-16
;  NUMBER OF SEQ ID NOS: 30
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 26
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Unknown Organism
;   FEATURE:
;   OTHER INFORMATION: Description of Unknown Organism: IFNalpha14 amino
;   OTHER INFORMATION: acid sequence
US-09-881-050-26

  Query Match             87.0%;  Score 851;  DB 3;  Length 189;
  Best Local Similarity   85.2%;  Pred. No. 2.5e-81;
  Matches  161;  Conservative   16;  Mismatches   12;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||||| |:|||||:||| |||||:| |||||:||||||:|||| ||||||||||||||
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Db          1 MALPFALMMALVVLSCKSSCSLGCNLSQTHSLNNRRTLMLMAQMRRISPFSCLKDRHDFE 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||:||||||||||:||| ||||||:||| ||:||:||||
Db         61 FPQEEFDGNQFQKAQAISVLHEMMQQTFNLFSTKNSSAAWDETLLEKFYIELFQQMNDLE 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:||||| |||| |:|||||||||| |||||||||||||||||||| | |
Db        121 ACVIQEVGVEETPLMNEDSILAVKKYFQRITLYLMEKKYSPCAWEVVRAEIMRSFSFSTN 180

Qy        181 LQERLRRKE 189
              ||:|||||:
Db        181 LQKRLRRKD 189


RESULT 15
US-09-919-497-73
; Sequence 73, Application US/09919497
; Patent No. US20020106662A1
; GENERAL INFORMATION:
;  APPLICANT: Mutter, George L.
;  TITLE OF INVENTION: PROGNOSTIC CLASSIFICATION OF ENDOMETRIAL CANCER
;  FILE REFERENCE: B0801/7225
;  CURRENT APPLICATION NUMBER: US/09/919,497
;  CURRENT FILING DATE:  2001-07-31
;  PRIOR APPLICATION NUMBER: US 60/221,735
;  PRIOR FILING DATE: 2000-07-31
;  NUMBER OF SEQ ID NOS: 100
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 73
;   LENGTH: 189
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-919-497-73

  Query Match            87.0%;  Score 851;  DB 3;  Length 189;
  Best Local Similarity  86.2%;  Pred. No. 2.5e-81;
  Matches  163;  Conservative   15;  Mismatches   11;  Indels    0;  Gaps    0;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||||::||: |||||||||||||||| ||| |:::|||||||||||||||||||
Db          1 MALSFSLLMAVLVLSYKSICSLGCDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              ||||||||||||||||||||||||||||||||||||||:::||:|| ||| |||||:|
Db         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDME 120

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::||||||:|||||||| |:|||||||||||||||||||||||||||||||||||||
Db        121 ACVIQEVGVEETPLMNVDSILAVKKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKI 180

Qy        181 LQERLRRKE 189
              ||||||||
Db        181 FQERLRRKE 189


Search completed: December 15, 2005, 13:06:19
Job time : 167 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: December 15, 2005, 12:58:05 ; Search time 13 Seconds
(without alignments)
97.913 Million cell updates/sec

Title: US-10-698-402-2
Perfect score: 978
Sequence: 1 MALPFVLLMALVVLNCKSIC.....EIMRSFSLSANLQERLRRKE 189

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 51463 seqs, 6734788 residues

Total number of hits satisfying chosen parameters: 51463

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Published_Applications_AA_New:*
1: /cgn2_6/ptodata/2/pubpaa/US09_NEW_PUB.pep:*
2: /cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
3: /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
4: /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
5: /cgn2_6/ptodata/2/pubpaa/PCT_NEW_PUB.pep:*
6: /cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
7: /cgn2_6/ptodata/2/pubpaa/US11_NEW_PUB.pep:*
8: /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	864	88.3	166	7	US-11-132-722-49	Sequence 49, Appl
2	809.5	82.8	415	7	US-11-029-003-12	Sequence 12, Appl
3	809.5	82.8	423	7	US-11-029-003-10	Sequence 10, Appl
4	809.5	82.8	430	7	US-11-029-003-22	Sequence 22, Appl
5	809.5	82.8	669	7	US-11-053-100-39	Sequence 39, Appl
6	801	81.9	167	7	US-11-132-722-58	Sequence 58, Appl
7	775	79.2	166	7	US-11-132-722-57	Sequence 57, Appl
8	765	78.2	166	7	US-11-132-722-43	Sequence 43, Appl
9	762	77.9	166	7	US-11-132-722-36	Sequence 36, Appl
10	761	77.8	166	7	US-11-132-722-41	Sequence 41, Appl
11	757	77.4	166	7	US-11-132-722-5	Sequence 5, Appli
12	757	77.4	166	7	US-11-132-722-54	Sequence 54, Appl
13	755	77.2	166	7	US-11-132-722-44	Sequence 44, Appl
14	754	77.1	166	7	US-11-132-722-3	Sequence 3, Appli
15	754	77.1	166	7	US-11-132-722-48	Sequence 48, Appl
16	752	76.9	166	7	US-11-132-722-6	Sequence 6, Appli
17	750	76.7	166	7	US-11-132-722-37	Sequence 37, Appl
18	750	76.7	166	7	US-11-132-722-40	Sequence 40, Appl
19	749	76.6	166	7	US-11-132-722-35	Sequence 35, Appl
20	749	76.6	166	7	US-11-132-722-42	Sequence 42, Appl
21	748	76.5	166	7	US-11-132-722-4	Sequence 4, Appli
22	748	76.5	166	7	US-11-132-722-32	Sequence 32, Appl
23	746	76.3	166	7	US-11-132-722-50	Sequence 50, Appl
24	743	76.0	166	7	US-11-132-722-17	Sequence 17, Appl
25	743	76.0	166	7	US-11-132-722-56	Sequence 56, Appl
26	742	75.9	166	7	US-11-132-722-8	Sequence 8, Appli
27	742	75.9	166	7	US-11-132-722-33	Sequence 33, Appl
28	742	75.9	166	7	US-11-132-722-53	Sequence 53, Appl
29	741	75.8	166	7	US-11-132-722-39	Sequence 39, Appl
30	740	75.7	166	7	US-11-132-722-9	Sequence 9, Appli
31	740	75.7	166	7	US-11-132-722-16	Sequence 16, Appl
32	740	75.7	166	7	US-11-132-722-34	Sequence 34, Appl
33	739	75.6	166	7	US-11-132-722-45	Sequence 45, Appl
34	738	75.5	166	7	US-11-132-722-2	Sequence 2, Appli
35	737	75.4	166	7	US-11-132-722-1	Sequence 1, Appli
36	737	75.4	166	7	US-11-132-722-12	Sequence 12, Appl
37	736	75.3	166	7	US-11-132-722-30	Sequence 30, Appl
38	736	75.3	166	7	US-11-132-722-31	Sequence 31, Appl
39	735	75.2	166	7	US-11-132-722-15	Sequence 15, Appl
40	735	75.2	166	7	US-11-132-722-38	Sequence 38, Appl
41	734	75.1	166	7	US-11-132-722-11	Sequence 11, Appl
42	732	74.8	166	7	US-11-132-722-14	Sequence 14, Appl
43	732	74.8	166	7	US-11-132-722-20	Sequence 20, Appl
44	731	74.7	166	7	US-11-132-722-10	Sequence 10, Appl
45	731	74.7	166	7	US-11-132-722-29	Sequence 29, Appl

ALIGNMENTS

RESULT 1
US-11-132-722-49
; Sequence 49, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
; APPLICANT: Patten, Phillip A., et al.
; TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
; TITLE OF INVENTION: CONJUGATES
; FILE REFERENCE: 0280.310US
; CURRENT APPLICATION NUMBER: US/11/132,722
; CURRENT FILING DATE: 2005-05-18
; PRIOR APPLICATION NUMBER: US 60/572,504
; PRIOR FILING DATE: 2004-05-19
; NUMBER OF SEQ ID NOS: 90
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 49
; LENGTH: 166
; TYPE: PRT
; ORGANISM: homo sapiens
US-11-132-722-49

Query Match 88.3%; Score 864; DB 7; Length 166;
Best Local Similarity 100.0%; Pred. No. 1.8e-82;
Matches 166; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           1 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 60

Qy          84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          61 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 120

Qy         144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
               |||||||||||||||||||||||||||||||||||||||||||||
Db         121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 166
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RESULT 2
US-11-029-003-12
; Sequence 12, Application US/11029003
; Publication No. US20050260194A1
; GENERAL INFORMATION:
; APPLICANT: PETERS, ROBERT T.
; APPLICANT: MEZO, ADAM R.
; APPLICANT: RIVERA, DANIEL S.
; APPLICANT: BITONTI, ALAN J.
; APPLICANT: STATTEL, JAMES

```
;  TITLE OF INVENTION: IMMUNOGLOBULIN CHIMERIC MONOMER-DIMER HYBRIDS
;  FILE REFERENCE: 08945.0007-01000
;  CURRENT APPLICATION NUMBER: US/11/029,003
;  CURRENT FILING DATE:  2005-01-05
;  PRIOR APPLICATION NUMBER: 60/539,207
;  PRIOR FILING DATE: 2004-01-26
;  PRIOR APPLICATION NUMBER: 60/487,964
;  PRIOR FILING DATE: 2003-07-17
;  PRIOR APPLICATION NUMBER: 60/469,600
;  PRIOR FILING DATE: 2003-05-06
;  NUMBER OF SEQ ID NOS: 91
;  SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 12
;   LENGTH: 415
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Synthetic
;   OTHER INFORMATION: construct
US-11-029-003-12

  Query Match            82.8%;  Score 809.5;  DB 7;  Length 415;
  Best Local Similarity  83.6%;  Pred. No. 2.5e-76;
  Matches  158;  Conservative   11;  Mismatches   19;  Indels    1;  Gaps    1;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||:||:||:||| ||:|||||||||| :|||||::||| ||| ||||||||||
Db          1 MALTFALLVALLVLSCKSSCSVGCDLPQTHSLGSRRTLMLLAQMRRISLFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||| |||||||: | |||||||| |||||||||| ||||||||||||||||||||
Db         61 FPQEEF-GNQFQKAETIPVLHEMIQQIFNLFSTKDSSAAWDETLLDKFYTELYQQLNDLE 119

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::| ||| :|||| |||| |||||||||||| ||||||||||||||||||||||| |
Db        120 ACVIQGVGVTETPLMKEDSILAVRKYFQRITLYLKEKKYSPCAWEVVRAEIMRSFSLSTN 179

Qy        181 LQERLRRKE 189
              ||| || ||
Db        180 LQESLRSKE 188


RESULT 3
US-11-029-003-10
; Sequence 10, Application US/11029003
; Publication No. US20050260194A1
; GENERAL INFORMATION:
;  APPLICANT: PETERS, ROBERT T.
;  APPLICANT:  MEZO, ADAM R.
;  APPLICANT:  RIVERA, DANIEL S.
;  APPLICANT:  BITONTI, ALAN J.
;  APPLICANT:  STATTEL, JAMES
;  TITLE OF INVENTION: IMMUNOGLOBULIN CHIMERIC MONOMER-DIMER HYBRIDS
;  FILE REFERENCE: 08945.0007-01000
;  CURRENT APPLICATION NUMBER: US/11/029,003
;  CURRENT FILING DATE:  2005-01-05
;  PRIOR APPLICATION NUMBER: 60/539,207
;  PRIOR FILING DATE: 2004-01-26
;  PRIOR APPLICATION NUMBER: 60/487,964
;  PRIOR FILING DATE: 2003-07-17
;  PRIOR APPLICATION NUMBER: 60/469,600
;  PRIOR FILING DATE: 2003-05-06
;  NUMBER OF SEQ ID NOS: 91
;  SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 10
;   LENGTH: 423
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Synthetic
;   OTHER INFORMATION: construct
US-11-029-003-10

  Query Match            82.8%;  Score 809.5;  DB 7;  Length 423;
  Best Local Similarity  83.6%;  Pred. No. 2.6e-76;
  Matches  158;  Conservative   11;  Mismatches   19;  Indels    1;  Gaps    1;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||:||:||:||| ||:|||||||||| :|||||::||| ||| ||||||||||
Db          1 MALTFALLVALLVLSCKSSCSVGCDLPQTHSLGSRRTLMLLAQMRRISLFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||| |||||||: | |||||||| |||||||||| ||||||||||||||||||||
Db         61 FPQEEF-GNQFQKAETIPVLHEMIQQIFNLFSTKDSSAAWDETLLDKFYTELYQQLNDLE 119

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::| ||| :|||| |||| |||||||||||| ||||||||||||||||||||||| |
Db        120 ACVIQGVGVTETPLMKEDSILAVRKYFQRITLYLKEKKYSPCAWEVVRAEIMRSFSLSTN 179

Qy        181 LQERLRRKE 189
              ||| || ||
Db        180 LQESLRSKE 188


RESULT 4
US-11-029-003-22
; Sequence 22, Application US/11029003
; Publication No. US20050260194A1
; GENERAL INFORMATION:
;  APPLICANT: PETERS, ROBERT T.
;  APPLICANT:  MEZO, ADAM R.
;  APPLICANT:  RIVERA, DANIEL S.
;  APPLICANT:  BITONTI, ALAN J.
;  APPLICANT:  STATTEL, JAMES
;  TITLE OF INVENTION: IMMUNOGLOBULIN CHIMERIC MONOMER-DIMER HYBRIDS
;  FILE REFERENCE: 08945.0007-01000
;  CURRENT APPLICATION NUMBER: US/11/029,003
;  CURRENT FILING DATE:  2005-01-05
;  PRIOR APPLICATION NUMBER: 60/539,207
;  PRIOR FILING DATE: 2004-01-26
;  PRIOR APPLICATION NUMBER: 60/487,964
;  PRIOR FILING DATE: 2003-07-17
;  PRIOR APPLICATION NUMBER: 60/469,600
;  PRIOR FILING DATE: 2003-05-06
;  NUMBER OF SEQ ID NOS: 91
;  SOFTWARE: PatentIn Ver. 3.2
; SEQ ID NO 22
;   LENGTH: 430
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Description of Artificial Sequence: Synthetic
;   OTHER INFORMATION: construct
US-11-029-003-22

  Query Match            82.8%;  Score 809.5;  DB 7;  Length 430;
  Best Local Similarity  83.6%;  Pred. No. 2.7e-76;
  Matches  158;  Conservative   11;  Mismatches   19;  Indels    1;  Gaps    1;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||:||:||:||| ||:|||||||||| :|||||::||| ||| ||||||||||
Db          1 MALTFALLVALLVLSCKSSCSVGCDLPQTHSLGSRRTLMLLAQMRRISLFSCLKDRHDFG 60

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||| |||||||: | |||||||| |||||||||| ||||||||||||||||||||
Db         61 FPQEEF-GNQFQKAETIPVLHEMIQQIFNLFSTKDSSAAWDETLLDKFYTELYQQLNDLE 119

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::| ||| :|||| |||| |||||||||||| ||||||||||||||||||||||| |
Db        120 ACVIQGVGVTETPLMKEDSILAVRKYFQRITLYLKEKKYSPCAWEVVRAEIMRSFSLSTN 179

Qy        181 LQERLRRKE 189
              ||| || ||
Db        180 LQESLRSKE 188
```

```
RESULT 5
US-11-053-100-39
; Sequence 39, Application US/11053100
; Publication No. US20050255554A1
; GENERAL INFORMATION:
;  APPLICANT: CHILKOTI, Ashutosh
;  TITLE OF INVENTION: FUSION PEPTIDES ISOLATABLE BY PHASE TRANSITION
;  FILE REFERENCE: 4176-101 CIP
;  CURRENT APPLICATION NUMBER: US/11/053,100
;  CURRENT FILING DATE:  2005-02-08
;  PRIOR APPLICATION NUMBER: US 09/812,382
;  PRIOR FILING DATE: 2001-03-20
;  PRIOR APPLICATION NUMBER: US 60/190,659
;  PRIOR FILING DATE: 2000-03-20
;  NUMBER OF SEQ ID NOS: 58
;  SOFTWARE: PatentIn version 3.3
; SEQ ID NO 39
;   LENGTH: 669
;   TYPE: PRT
;   ORGANISM: Artificial
;   FEATURE:
;   OTHER INFORMATION: Synthetic Construct
;   FEATURE:
;   NAME/KEY: MISC_FEATURE
;   LOCATION: (1)..(669)
;   OTHER INFORMATION: pET32a-SD11-ELP1-90-throm-Interferon Alpha 2B
US-11-053-100-39

  Query Match             82.8%;  Score 809.5;  DB 7;  Length 669;
  Best Local Similarity   83.6%;  Pred. No. 4.8e-76;
  Matches  158;  Conservative   11;  Mismatches   19;  Indels    1;  Gaps    1;

Qy          1 MALPFVLLMALVVLNCKSICSLGCDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFG 60
              ||| | ||:||:||:||| ||:|||||||||| :|||||::||| ||| ||||||||||
Db        482 MALTFALLVALLVLSCKSSCSVGCDLPQTHSLGSRRTLMLLAQMRRISLFSCLKDRHDFG 541

Qy         61 FPQEEFDGNQFQKAQAISVLHEMIQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLE 120
              |||||| |||||||: | |||||||| |||||||||| ||||||||||||||||||||
Db        542 FPQEEF-GNQFQKAETIPVLHEMIQQIFNLFSTKDSSAAWDETLLDKFYTELYQQLNDLE 600

Qy        121 ACMMQEVGVEDTPLMNVDSILTVRKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSAN 180
              ||::| ||| :|||| |||| |||||||||||| ||||||||||||||||||||||| |
Db        601 ACVIQGVGVTETPLMKEDSILAVRKYFQRITLYLKEKKYSPCAWEVVRAEIMRSFSLSTN 660

Qy        181 LQERLRRKE 189
              ||| || ||
Db        661 LQESLRSKE 669


RESULT 6
US-11-132-722-58
; Sequence 58, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip A., et al.
;  TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
;  TITLE OF INVENTION:  CONJUGATES
;  FILE REFERENCE: 0280.310US
;  CURRENT APPLICATION NUMBER: US/11/132,722
;  CURRENT FILING DATE:  2005-05-18
;  PRIOR APPLICATION NUMBER: US 60/572,504
;  PRIOR FILING DATE: 2004-05-19
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 58
;   LENGTH: 167
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic Construct IFN-alpha Con1
US-11-132-722-58

  Query Match             81.9%;  Score 801;  DB 7;  Length 167;
  Best Local Similarity   91.0%;  Pred. No. 5.8e-76;
  Matches  151;  Conservative    9;  Mismatches    6;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||| ||| |:::||| ||||||||||||||||||||||||||||||||||||
Db          2 CDLPQTHSLGNRRALILLAQMRRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 61

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              |||||||||||||| |||:||:||||||||||||||::||||||:|||||||||| |
Db         62 IQQTFNLFSTKDSSAAWDESLLEKFYTELYQQLNDLEACVIQEVGVEETPLMNVDSILAV 121

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              :|||||||||||||||||||||||||||||||||| |||||||||
Db        122 KKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSTNLQERLRRKE 167


RESULT 7
US-11-132-722-57
; Sequence 57, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip A., et al.
;  TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
;  TITLE OF INVENTION:  CONJUGATES
;  FILE REFERENCE: 0280.310US
;  CURRENT APPLICATION NUMBER: US/11/132,722
;  CURRENT FILING DATE:  2005-05-18
;  PRIOR APPLICATION NUMBER: US 60/572,504
;  PRIOR FILING DATE: 2004-05-19
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 57
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: homo sapiens
US-11-132-722-57

  Query Match             79.2%;  Score 775;  DB 7;  Length 166;
  Best Local Similarity   88.6%;  Pred. No. 2.8e-73;
  Matches  147;  Conservative   11;  Mismatches    8;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||| ||| |:::||||||||||||||||||||||||||||||||||||||||
Db          1 CDLPQTHSLGNRRALILLAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              |||||||||||||||:::||:|| ||| |||||||||::||||||:|||||||||| |
Db         61 IQQTFNLFSTKDSSATWEQSLLEKFSTELNQQLNDLEACVIQEVGVEETPLMNVDSILAV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              :|||||||||||||||||||||||||||||||||   ||||||||
Db        121 KKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSKIFQERLRRKE 166


RESULT 8
US-11-132-722-43
; Sequence 43, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip A., et al.
;  TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
;  TITLE OF INVENTION:  CONJUGATES
;  FILE REFERENCE: 0280.310US
;  CURRENT APPLICATION NUMBER: US/11/132,722
;  CURRENT FILING DATE:  2005-05-18
;  PRIOR APPLICATION NUMBER: US 60/572,504
;  PRIOR FILING DATE: 2004-05-19
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 43
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
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;   FEATURE:
;   OTHER INFORMATION: Synthetic Construct 25Epi28
US-11-132-722-43

  Query Match             78.2%;  Score 765;  DB 7;  Length 166;
  Best Local Similarity   88.0%;  Pred. No. 3e-72;
  Matches  146;  Conservative    8;  Mismatches   12;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              |||||||||||||||||:|||| ||||||||||||||||||:|||||:| || ||||||||:
Db          1 CDLPQTHSLSNRRTLMLMAQMRRISPFSCLKDRHDFGFPEEEFDGHQAQKVQAISVLHEL 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              ||||||||||||||| ||||||:||| |||||||||||::||||||:  |||||||| |
Db         61 IQQTFNLFSTKDSSAAWDETLLEKFYIELYQQLNDLEACVIQEVGVEEIALMNVDSILAV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              |||||||||||||||||||||||||||||| | |||| || ||
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSFSTNLQESLRSKE 166


RESULT 9
US-11-132-722-36
; Sequence 36, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip A., et al.
;  TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
;  TITLE OF INVENTION:  CONJUGATES
;  FILE REFERENCE: 0280.310US
;  CURRENT APPLICATION NUMBER: US/11/132,722
;  CURRENT FILING DATE:  2005-05-18
;  PRIOR APPLICATION NUMBER: US 60/572,504
;  PRIOR FILING DATE: 2004-05-19
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 36
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic Construct 25Epi08
US-11-132-722-36

  Query Match             77.9%;  Score 762;  DB 7;  Length 166;
  Best Local Similarity   86.7%;  Pred. No. 6.1e-72;
  Matches  144;  Conservative   12;  Mismatches   10;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              |||||||||||||||||:|||| ||||||||||||||||||:|||||:|||| ||||||||:
Db          1 CDLPQTHSLSNRRTLMLMAQMRRISPFSCLKDRHDFGFPEEEFDGHQFQKTQAISVLHEL 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              ||||||||||||||| ||||||:||| ||:||:|:||||::||||||:  |||||||| |
Db         61 IQQTFNLFSTKDSSAAWDETLLEKFYIELFQQMNNLEACVIQEVGVEEIALMNVDSILAV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              ||||:|||||||||||||||||||||||||| |||| || ||
Db        121 RKYFRRITLYLTEKKYSPCAWEVVRAEIMRSFSLSTNLQESLRSKE 166


RESULT 10
US-11-132-722-41
; Sequence 41, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip A., et al.
;  TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
;  TITLE OF INVENTION:  CONJUGATES
;  FILE REFERENCE: 0280.310US
;  CURRENT APPLICATION NUMBER: US/11/132,722
;  CURRENT FILING DATE:  2005-05-18
;  PRIOR APPLICATION NUMBER: US 60/572,504
;  PRIOR FILING DATE: 2004-05-19
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 41
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic Construct 25Epi26
US-11-132-722-41

  Query Match             77.8%;  Score 761;  DB 7;  Length 166;
  Best Local Similarity   87.3%;  Pred. No. 7.8e-72;
  Matches  145;  Conservative    9;  Mismatches   12;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              |||||||||||||||||:|||| ||||||||||||||||||:|||||:| || ||||||||:
Db          1 CDLPQTHSLSNRRTLMLMAQMRRISPFSCLKDRHDFGFPEEEFDGHQAQKVQAISVLHEL 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              ||||||||||||||| ||||||:||| |||||||||||::||||||:  |||||||| |
Db         61 IQQTFNLFSTKDSSAAWDETLLEKFYIELYQQLNDLEACVIQEVGVEEIALMNVDSILAV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              ||||:|||||||||||||||||||||||||| | |||| || ||
Db        121 RKYFRRITLYLTEKKYSPCAWEVVRAEIMRSFSFSTNLQESLRSKE 166


RESULT 11
US-11-132-722-5
; Sequence 5, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip A., et al.
;  TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
;  TITLE OF INVENTION:  CONJUGATES
;  FILE REFERENCE: 0280.310US
;  CURRENT APPLICATION NUMBER: US/11/132,722
;  CURRENT FILING DATE:  2005-05-18
;  PRIOR APPLICATION NUMBER: US 60/572,504
;  PRIOR FILING DATE: 2004-05-19
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 5
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct 14epi10
US-11-132-722-5

  Query Match             77.4%;  Score 757;  DB 7;  Length 166;
  Best Local Similarity   86.1%;  Pred. No. 2e-71;
  Matches  143;  Conservative   11;  Mismatches   12;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||| :|||:|::||| ||| |||||||||| ||||||||| ||||:||||||||
Db          1 CDLPQTHSLGHRRTMMLLAQMRRISLFSCLKDRHDFRFPQEEFDGNHFQKAEAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              :|||||||||||||| |||||:||| ||:||:||||||:|||||||:|||||||||| |
Db         61 MQQTFNLFSTKDSSAAWDETLLEKFYIELFQQMNDLEACVMQEVGVEETPLMNVDSILAV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              |||||||||||||||||||||||||||||| | |||| || ||
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSFSTNLQESLRSKE 166


RESULT 12
US-11-132-722-54
; Sequence 54, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
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;  APPLICANT: Patten, Phillip A., et al.
;  TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
;  TITLE OF INVENTION:  CONJUGATES
;  FILE REFERENCE: 0280.310US
;  CURRENT APPLICATION NUMBER: US/11/132,722
;  CURRENT FILING DATE:  2005-05-18
;  PRIOR APPLICATION NUMBER: US 60/572,504
;  PRIOR FILING DATE: 2004-05-19
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 54
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: homo sapiens
US-11-132-722-54

  Query Match             77.4%;  Score 757;  DB 7;  Length 166;
  Best Local Similarity   86.1%;  Pred. No. 2e-71;
  Matches  143;  Conservative   13;  Mismatches   10;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              |:| |||||:||||||:|||| |||||||||||||| |||||||||||||||||||||||
Db          1 CNLSQTHSLNNRRTLMLMAQMRRISPFSCLKDRHDFEFPQEEFDGNQFQKAQAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              :|||||||||||:||| ||||||:||| ||:||:||||||::||||||:||||| |||| |
Db         61 MQQTFNLFSTKNSSAAWDETLLEKFYIELFQQMNDLEACVIQEVGVEETPLMNEDSILAV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              |||||||||||| |||||||||||||||||||| | |||:|||||:
Db        121 RKYFQRITLYLMEKKYSPCAWEVVRAEIMRSFSFSTNLQKRLRRKD 166


RESULT 13
US-11-132-722-44
; Sequence 44, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip A., et al.
;  TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
;  TITLE OF INVENTION:  CONJUGATES
;  FILE REFERENCE: 0280.310US
;  CURRENT APPLICATION NUMBER: US/11/132,722
;  CURRENT FILING DATE:  2005-05-18
;  PRIOR APPLICATION NUMBER: US 60/572,504
;  PRIOR FILING DATE: 2004-05-19
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 44
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic Construct 25Epi29
US-11-132-722-44

  Query Match             77.2%;  Score 755;  DB 7;  Length 166;
  Best Local Similarity   85.5%;  Pred. No. 3.2e-71;
  Matches  142;  Conservative   13;  Mismatches   11;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              |||||||||||||||:|||| |||||||||||||||:|||||:|||| ||||||||:
Db          1 CDLPQTHSLSNRRTLMLMAQMRRISPFSCLKDRHDFGFPEEEFDGHQFQKTQAISVLHEL 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              |||||||||||||| |||||||||| ||:||:|:||||::||||||:  |||||||| |
Db         61 IQQTFNLFSTKDSSAAWDETLLEKFYIELFQQMNNLEACVIQEVGVEEIALMNVDSILAV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              ||||:|||||||||||||||||||||||| | |||: || ||
Db        121 RKYFRRITLYLTEKKYSPCAWEVVRAEIMRSFSFSTNLQDSLRSKE 166


RESULT 14
US-11-132-722-3
; Sequence 3, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip A., et al.
;  TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
;  TITLE OF INVENTION:  CONJUGATES
;  FILE REFERENCE: 0280.310US
;  CURRENT APPLICATION NUMBER: US/11/132,722
;  CURRENT FILING DATE:  2005-05-18
;  PRIOR APPLICATION NUMBER: US 60/572,504
;  PRIOR FILING DATE: 2004-05-19
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 3
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: Artificial Sequence
;   FEATURE:
;   OTHER INFORMATION: Synthetic construct 14epi08
US-11-132-722-3

  Query Match             77.1%;  Score 754;  DB 7;  Length 166;
  Best Local Similarity   86.1%;  Pred. No. 4.1e-71;
  Matches  143;  Conservative   10;  Mismatches   13;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||| :|||:|::||| ||| |||||||||| ||||||||| |||| ||||||||
Db          1 CDLPQTHSLGHRRTMMLLAQMRRISLFSCLKDRHDFRFPQEEFDGNHFQKAPAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              :|||||||||||||| |||||||||| ||:||:|||||||:|||||||:|||||||||| |
Db         61 MQQTFNLFSTKDSSAAWDETLLEKFYIELFQQMNDLEACVMQEVGVEETPLMNVDSILAV 120

Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              |||||||||||||||||||||||||||||| | |||| || ||
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSFSTNLQESLRSKE 166


RESULT 15
US-11-132-722-48
; Sequence 48, Application US/11132722
; Publication No. US20050266465A1
; GENERAL INFORMATION:
;  APPLICANT: Patten, Phillip A., et al.
;  TITLE OF INVENTION: INTERFERON-ALPHA POLYPEPTIDES AND
;  TITLE OF INVENTION:  CONJUGATES
;  FILE REFERENCE: 0280.310US
;  CURRENT APPLICATION NUMBER: US/11/132,722
;  CURRENT FILING DATE:  2005-05-18
;  PRIOR APPLICATION NUMBER: US 60/572,504
;  PRIOR FILING DATE: 2004-05-19
;  NUMBER OF SEQ ID NOS: 90
;  SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 48
;   LENGTH: 166
;   TYPE: PRT
;   ORGANISM: homo sapiens
US-11-132-722-48

  Query Match             77.1%;  Score 754;  DB 7;  Length 166;
  Best Local Similarity   84.9%;  Pred. No. 4.1e-71;
  Matches  141;  Conservative   15;  Mismatches   10;  Indels    0;  Gaps    0;

Qy         24 CDLPQTHSLSNRRTLMIMAQMGRISPFSCLKDRHDFGFPQEEFDGNQFQKAQAISVLHEM 83
              ||||||||| ||| |:::|||||||| |||||||||||||:|||||:|||| |||||||||
Db          1 CDLPQTHSLGNRRALILLAQMGRISHFSCLKDRHDFGFPEEEFDGHQFQKTQAISVLHEM 60

Qy         84 IQQTFNLFSTKDSSATWDETLLDKFYTELYQQLNDLEACMMQEVGVEDTPLMNVDSILTV 143
              |||||||||:|||| |:::||:|| ||||||||||||::|||||:|||||||||||| |
Db         61 IQQTFNLFSTEDSSAAWEQSLLEKFSTELYQQLNDLEACVIQEVGVEETPLMNVDSILAV 120
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Qy        144 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSFSLSANLQERLRRKE 189
              ||||||||||||||||||||||||||||||| | | |||:|||||:
Db        121 RKYFQRITLYLTEKKYSPCAWEVVRAEIMRSLSFSTNLQKRLRRKD 166
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Search completed: December 15, 2005, 13:06:38
Job time : 14 secs